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RALPH EARLE

Second Impression

The Knickerbocker Press, New York

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PREFACE

THE science of conducting a war upon the sea is in these modern days very complex. The sea power of our nation is composed of units filled with the most intricate and delicate machinery of all types, and a personnel of scientifically trained men is required in order that the Navy may succeed in its twofold mission. In peace, this Navy must be ever prepared to maintain peace; in war, it must protect the country from invasion, and thus permit the routine of its wonted industrial and social life to continue uninterrupted by the presence of a foe within the nation's borders. The national defence primarily depends upon the strength and the efficiency of the Navy.

The Naval Academy accomplishes the education of the officers of the Navy, and is thus

360973

the very foundation of this national defence. This school is the rock upon which is built the whole fabric of our sea power.

The requirements of the vessels composing our fleets demand something vastly better in the way of education than was available to our great admiral, David Glasgow Farragut. A midshipman at nine and one half years of age, an officer aboard the *Essex* when just past ten, a prisoner of war at thirteen, Farragut had to obtain his schooling where and when he could. While a paroled prisoner of war he completed one year of study at Chester. For the remainder of his education he was indebted to the chaplain of the *Washington*. From 1816 to 1818, this officer, who during the last year was the American consul at Tunis, instructed Farragut in the rudiments of mathematics, English literature, French, and Italian. None more than Farragut appreciated the necessity of a thorough education for the officers of the Navy, and he urged repeatedly that the Navy must have the very best facilities for their training.

Preface

In this book an effort is mad
the methods adopted at the U
Naval Academy at Annapolis,
to give the midshipmen of our N
ough theoretical and practical
the knowledge of the many subje
naval profession demands. This
of the general scheme is of nece
places, but is given nevertheless
erable detail in the hope that it v
life of the midshipman at Annap
all who may be interested in th
creating a naval officer.

It is pointed out how, coincider
scientific and mechanical educati
implanted in the midshipman th
the physical qualities with whic
officer must be equipped in order
never lack the virtue, honour,
loyalty, and subordination that
rightly expects him always to pos

In the task of describing the lif
shipman the author has freely c
following works whenever it wa

in this manner to supplement his personal experience at the Naval Academy: Park Benjamin, *The United States Naval Academy;* J. R. Soley, *Historical Sketch of the United States Naval Academy, 1876;* W. O. Stevens, *Two Early Proposals for Naval Education* (Proceedings of U. S. Naval Institute, No. 145); W. O. Stevens and C. S. Alden, *A Guide to Annapolis and the Naval Academy;* C. S. Alden, *The "Santee" An Appreciation* (Proceedings of U. S. Naval Institute No. 146); J. A. Murphy, *Notes on the Swedish System of Physical Training* (Proceedings of U. S. Naval Institute, No. 142); J. Halligan, Jr., *Post Graduate Education in Naval Engineering* (Journal of the Society of Naval Engineers, Feb., 1916, vol. xxviii.); Harris Laning, *The Necessity of Protecting our Athletes* (Proceedings of U. S. Naval Institute, No. 146).

The author further desires to express his grateful appreciation of the assistance received from the midshipmen of the Naval Academy, particularly those of the editorial staff of the *Lucky Bag, 1916,* who supplied

pictures and aided materially by their
gestions; from the White Studio, which
tributed many of the photographs t
especially for the book; and from the m
bers of the Academic Staff of the N
Academy, who responded most genero
to the several requests for suggestion
criticism.

RALPH EARL

July 15, 1916.



INTRODUCTION

It is not generally realized by the publ
that the United States Naval Academy fac
during every year of its existence a task mo
difficult than that of any other institution
learning in the United States. The avera
university provides, or is supposed to provid
in its undergraduate department a gener
rounding out of the school training of tl
American boy and means of fitting him
take his place in those pursuits and business
which do not require a special technic
training. For those who specialize in tl
professions additional years of study a
required.

At the Naval Academy, the Governme
of the United States attempts to turn out i
four years a man who, more than any oth
graduate, is expected to be "all things
all men." It must be remembered that tl
entrance examinations at Annapolis a

intended to be suitable for any competent graduate of a first-class high school. This means that every effort must be made during the next four years to give the continuation of general education. And in addition, the students must be taught all of the nautical, all of the military, all of the scientific, all of the historical and legal knowledge that is necessary to the equipment of even the youngest ensign in the Navy. In other words, in four years these boys, gathered together from every State in the Union, from rich families and from poor families alike are expected to become, not only educated gentlemen, but also international lawyers keen observers, navigators, artillerists, engineers and also all around men and specialists.

On the whole the expectation of the people of the United States is justified. On the whole the United States Naval Academy accomplishes more in four years than any other college in the country. The result is the officer of the American Navy—not the man marked by any special brilliancy, no

the rare individual who does not measure up, but the body of officers as a whole. Their work in the present, as their work in the past, speaks for itself.

Many great educators have, after a cursory glance at the system of the Naval Academy, suggested radical changes. In most cases it can be shown that these changes have been tried in the past and have been found undesirable, but it is encouraging to realize that the Naval Academy does not stand still, that it is willing to take up new suggestions to keep abreast of the times. It is this spirit which will make its work effective in the years to come, as it has been until now.

The one thing that is needed more than any other is a greater and more intelligent interest on the part of the public in the many-sided life of the Naval Academy. This book satisfies a long-felt want and it also gives clearly and definitely the history, the life, and the aims of the greatest national institution of learning. Its publication is especially timely, for the increased interest of the people of the

United States in the building up of a Navy must make them realize that the safety of our coasts and indeed of our whole country depends not only on the welding together of masses of steel in the form of ships, but on the training of a greatly increased number of officers for the proper use of these ships. In the naval service officers cannot be trained in a few months or after war breaks out. A greater Annapolis is as essential as a greater fleet.

FRANKLIN D. ROOSEVELT.

NAVY DEPARTMENT,
January 20, 1917.

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Life
at the
U. S. Naval Academy

Life at the U. S. Naval Academy

CHAPTER I

HISTORICAL SKETCH

"Ex Scientia Tridens."

THE Military Academy at West Point has had a smoother sea for its cruise than has the academy of the sister service. No less a man than President Washington advised Congress in 1793 that it should provide a military school. In 1794 Congress created the corps of engineers and artillerists, giving to its members the grade "cadet," which grade has been perpetuated to the present day. Congress in effect founded the military

academy in that year, although this identi
academy lasted but two years, being compel
to close when fire destroyed the cadet sch
buildings at West Point. The school w
then discontinued. The United States M
tary Academy, as it exists today, commenc
its first academic year July 4, 1802, and,
spite of some severe setbacks, it has sin
continued to grow in influence and value
the country.

The Naval Academy was less fortuna
and many obstacles both from within a
without the service had to be encountered a
overcome before its founding became a fac
It was not established until events slowly,
must be the case, forced such an institutic
to take a place in our national life. The s
officers of our Navy in the twenties were m
that believed little in, and often activel
opposed, education, being of the firm convi
tion that the ship at sea provided sufficie
training for all future officers.

It is remembered that our Navy ca
officially into being by the Act of Congress

Historical Sketch

1794 after a close struggle, the act winni
only by the small margin of two votes. I
this act the President was authorized to a
point forty-eight midshipmen and to fix th
pay. Such appointments were often t
result of political favour, no requirements
to education being exacted, and natural
many thoroughly worthless youngsters we
sent to sea where, under the hard conditio
of living, they led their messmates into wi
habits. However, all of the famous nav
officers until the close of the Civil War ca
into the service in this way, unguided
schoolmasters and subject to no discipli
save that hard and unjust type then belongi
to the sea. The greater part of these mi
shipmen, despite such conditions, educat
themselves and became most worthy of t
nation and of perpetuating the traditions of t
service and thus deserve the sincere admi
tion and respect of the officers of the pres
day.

The need for better facilities for educati
so forcibly impressed itself upon many of t

abler officers that two makeshift naval schools came into being, the first on board the *Guerrière* in 1821 at New York and the second on board the *Java* at Norfolk. By 1833 there was a third school located at the Boston Navy Yard. Secretary Branch, in 1829, speaks of these schools as being "tolerated" because he could obtain no legal authorization and no funds for the purpose of educating young officers. Midshipmen not on cruising vessels were not on duty, and had not sufficient funds to proceed to their homes. As a result they waited in idleness at yards, where they yielded to many temptations, and only the best of them sought instruction. Such officers studied at colleges and at West Point to which it was once proposed to send one hundred midshipmen.

One of the most successful, consistent, and far-sighted advocates of a real naval academy was Lieutenant M. F. Maury, who, while only a passed midshipman, published a *Navigatio* that was successful in England and Americ and was used as a text-book when the pres

Naval Academy was founded. In 1841 and 1842 Maury wrote strong articles, that appeared as *Scraps from a Lucky Bag*, which he caused to be widely distributed, exposing the inadequacy of the Navy, both in material and personnel, together with the paralysing effect of political corruption. He is sometimes called the Father of the Naval Academy because of his untiring energy and devotion to the work of getting it started.

Chaplains, and later professors of mathematics, were detailed by the Department as schoolmasters, and in 1835 the corps of instructors was placed on a firm footing. However, as most of the instruction took place at sea, it was thoroughly unsatisfactory and inefficient. During recitations as well as during study periods a class was liable to be called away to reef topsails or to perform some of the other multitudinous duties of a man-of-war. This condition will always be unavoidable on shipboard; as the safety, efficiency, and preservation of the ship and her personnel and material permit no other

interests to conflict with their instant attention.

A memorial of protest against the conditions that prevented education was drawn up on the U. S. S. *Constitution* in 1836 and signed by fifty-five of her officers and by sixteen of the officers of the *Vandalia*. This memorial was forwarded to Congress by the Secretary of the Navy. It urged the establishment of a naval school as the only method whereby existing conditions could be remedied. The Secretaries of the Navy continually urged Congress to establish a school, but dread of expense just as continually deterred that body from doing so, although the Naval Committees reported favourably recommendation after recommendation for this object.

During the forties questions relating to the naval personnel pressed for solution constantly in Congress, the direction of effort being towards the end of obtaining better education for officers and seamen, naval rank, a retired list for the officers, and the general government and discipline of the service,

many laws being passed. The efforts in Congress to establish an academy for the Navy similar to the one for the Army were continuous from 1842 to 1845, but without success. These efforts possessed additional force owing to the introduction in 1839 of steam machinery in the Navy.

Sea officers were not unanimously in favour of a school, but it is decidedly worthy of note that such able and successful seamen as Farragut, Upshur, DuPont, Foote, Dahlgren, Buchanan, Goldsborough, and Craven were active in their efforts and untiring in the use of their influence in an endeavour to found a naval school.

Conditions in the service were, to put it mildly, scandalous, and were due no doubt to ignorance, as claimed by the advocates of a naval school. The mutiny on the *Somers* and the hanging of Acting Midshipman Spencer, a son of the Secretary of War, on December 1, 1842, directed the attention of the country to the faults and evils of a system that brought into the Navy at the command

of politicians youths of bad and vicious character. This tragic occurrence is credited with being the real cause of the establishment of the Naval Academy, although in reality it was only added fuel to the fire already burning. The need of one school to teach navigation, mathematics, languages, international law, and the principles of the steam engine was manifest and was bound, in spite of all obstacles, to bring into being such a school.

In 1838 the Naval Asylum School was established at the Naval Home at Philadelphia with a one-year course. In 1841, this school, which possessed only the most paltry and inadequate accommodations both for living and learning, was attended by thirty-four midshipmen, one professor acting as in charge and as the sole instructor. In April, 1842, Professor William Chauvenet became head of this school. Through his own energy and the help of the Governor of the Naval Home better quarters were secured. A good, well-lighted room and the acquisition of chronometers and sextants conduced to much

higher standards of education, but the time, one year, was most decidedly insufficient. Professor Chauvenet drew up detailed plans of study calling for a minimum course of two years on shore. Secretary Henshaw agreed to make the Naval Asylum course two years instead of one and this extension was to go into effect September, 1844. His order to do so was revoked by Mr. Mason, his successor.

In 1844 there were in service fourteen professors at sea, and one at Boston, one at Norfolk, three at Philadelphia, and three on special service.

George Bancroft of Massachusetts, an authority on education, having taken his degree at Harvard University in 1817, and at Göttingen, in 1820, and since that time having had personal experience in teaching became Secretary of the Navy on March 4, 1845. As Congress was unable to establish a Naval School, he decided to accomplish this purpose without recourse to national legislation by using only skill, diplomacy, and his own ability. In pursuit of this plan

he found ready for his use the plan of Professor Chauvenet made for the Naval Asylum School. On June 13, 1845, he directed the Board of Examiners of the Naval Asylum School to report as to the desirability of establishing a Naval School. This Board, the senior member of which was Commodore George C. Read, urged the early establishment of a Naval School and a concentration and centralization of efforts to educate the young naval officers. As no funds had been appropriated by Congress for a Naval School the choice of a site was necessarily restricted. The practically abandoned army post of Fort Severn, comprising nine acres on Windmill Point between the harbour of Annapolis and the Severn River, was available, and its selection was urged by Captain Mayo, one of the members of the Board. On the receipt of the report of this Board Annapolis was visited by Secretary Bancroft, Governor Marcy, Secretary of War, and Commander Warrington, Chief of the Bureau of Yards and Docks.

A second Board composed of Commanders McKean, Buchanan, and DuPont was now appointed by Secretary Bancroft, which also recommended Annapolis, and, furthermore, that Lieutenant Ward, with Professors Chauvenet and Lockwood, constitute the staff of the proposed school. Thus Secretary Bancroft had succeeded in having two Boards agree upon the same site for the desired school. On August 15, 1845, the War Department transferred this Fort Severn reservation to the Navy Department, and from Philadelphia to this spot was transferred the Naval Asylum School.

Commander Franklin Buchanan, U. S. Navy, who had been a member of the second Board, was made the first commanding officer of the school. He organized the Academic Board in the following order:

NAVAL SCHOOL, ANNAPOLIS, MD.,
October 4, 1845.

GENTLEMEN:

You will convene as a Board and arrange the classes of the Midshipmen attached to the Naval

School, decide upon the hours of recitation, the number of hours necessary to be applied to study, and designate the days, hours, and time required for the various lectures and submit for my approval the result of your deliberations.

The course of instruction will be comprised under the following heads—Mathematics, Natural Philosophy, Chemistry, Gunnery and the use of Steam, Geography, English Grammar, Arithmetic, History, the French and Spanish languages, and such other branches desirable to the accomplishment of a Naval Officer as your judgment may dictate.

Lieutenant Ward will act as President of the Board.

Very Respectfully
Your Obdt Servt
(Signed) FRANK^N BUCHANAN
Superintendent

TO THE PROFESSORS
ATTACHED TO THE NAVAL SCHOOL
ANNAPOLIS MD.

The Naval School at Annapolis was formally opened on October 10, 1845, with an address by Commander Buchanan delivered in one of the recitation rooms to the fifty midshipmen in attendance. As a contrast, it is interesting to note that the academic year



COMMANDER FRANKLIN BUCHANAN, U. S. NAVY
The First Superintendent, 1845



1915–1916, beginning October 1, 1915, found *nine hundred and eighteen* midshipmen in attendance, *the greatest number up to that date in the history of the Academy.*

The courses followed closely those worked out for the Philadelphia school. The conduct of the school was by no means an easy matter. The "oldsters,"—that is, those midshipmen recalled from sea—resented the fact that they were required to study, and especially in company with the "youngsters," as those who were just appointed and who consequently had never been to sea were called. Commander Buchanan was more than equal to the task, being a man of inflexible will and a stern disciplinarian, who brought under control the reckless and improvident youngsters thus suddenly removed from the restraint of shipboard life and forced to study, a thing for which they had no desire. A member of this first body of students, Rear Admiral Edward Simpson, an officer appointed in 1840, thus described the novel situation in which the midshipmen found themselves: "We were men

ranging from twenty-one to twenty-six years of age, had been in active service as officers for five years, accustomed to discipline afloat, but, like sailors, prone to relaxation when on shore, and it required effort to accustom ourselves to the new and unexpected order of things, and it is very certain that all did not recognize the advantages nor the benefit that was to follow. Attempts were made to kick over the traces, but there was a strong hand at the helm, and discretion was found to be advisable."

The plan of organization proposed that a grade of naval cadet inferior to that of midshipman should be created by law and that these naval cadets should comprise the primary class of the school. The entrance age was fixed between thirteen and sixteen years. The change in title was not to occur for many years. The course, rather irregularly carried out due to causes beyond the control of the officers of the school, comprised five years, the first and last spent at the school, the intervening three at sea.

Late in the summer of 1846 Congress made its first appropriation of funds, amounting to twenty-eight thousand two hundred dollars for "repairs, improvements, and instruction at Fort Severn, Annapolis, Md."[1] Three days after the bill became law Secretary Bancroft directed Commander Buchanan to enlarge the buildings and construct new ones. When the School was fully under way, Commander Buchanan applied for sea duty in the Mexican War and, March 16, 1847, he became commanding officer of the *Germantown* taking an active part in that war being present at the capture of Vera Cruz.

A revision of the curriculum soon became a necessity. A new code of regulations was, in consequence, drawn up by a Board of seven,

[1] This amount was practically the same as had been appropriated for many years for "the instruction of midshipmen and other purposes," the appropriation differing from previous ones only in the slight change of the wording. By placing eleven out of the twenty-two civilian professors upon waiting orders without pay, the Secretary was enabled to save some $14,800 of this appropriation. This amount he used for repairs and new construction at the Naval School.

one of whom was the Superintendent of the Military Academy. These regulations were approved and put into operation, and, in accordance with these regulations, the Naval School on July 1, 1850, became the United States Naval Academy.

Under this organization the plan of sending students to sea during an intermediate three years was continued and the attendance at the Academy was increased to four years. The element composed of the sea officers was thus ever to the fore, as the officer's prime requisite then was seamanship; gunnery in the Navy was an unperfected science, the guns being but crude instruments. Owing to the additional time now allowed the midshipmen for study, it was possible to extend the course greatly, and the present system of separate departments, each with an executive head, was fully adopted. In July, 1850, the present marking scale of 4 came into use, with, in the following May, the present system of multiples and coefficients. This Board of seven also inaugurated the Board of Visitors, a

committee appointed to attend the annual examination of the Academy for the purpose of making report, criticism, and recommendations.

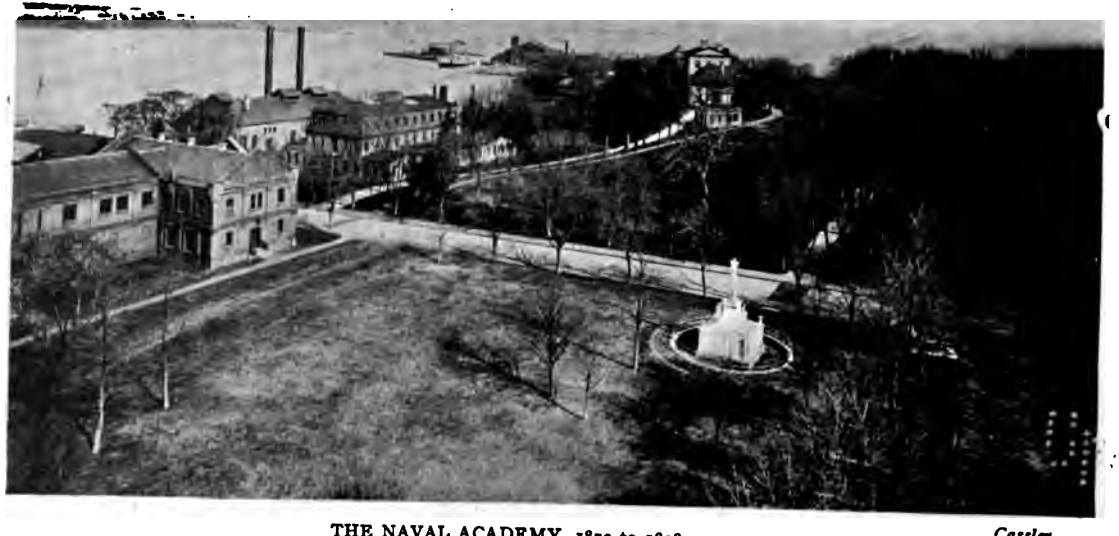
The sloop-of-war *Preble* was obtained as a practice ship for the summer of 1851. This vessel in the summer of 1852 made the first foreign summer practice cruise. The training of midshipmen on a ship commissioned solely for this one purpose met with approval that resulted in the growth of a sentiment in favour of making the academic course continuous, breaking it only by the summer practice cruises, instead of by the three years spent at sea prior to the final academic year.

This idea culminated in the adoption of such a recommendation of the Academic Board by a board appointed in 1851, among the members of which again is found the first Superintendent of the Academy, Commander Buchanan. This resulted, November, 1851, in making the course at the Naval Academy a consecutive one of four years with an annual summer practice cruise of three months. This system

has continued to the present date despite the existence of many reasons for a partial return to the first system of Commander Buchanan. That the present system may possibly not be the best is still a debatable matter, and naval opinion appears to be crystallizing towards a partial return to that adopted in the beginning by our sea officers by establishing a period of about fourteen months prior to the final academic year to be spent in a cruising ship. Such a system would necessitate a five year midshipman course, an increase of one year.

The first graduation exercises of the Academy took place at noon of a June day in 1854. They consisted in a muster of all hands, prayer by the Chaplain, a brief address by the Superintendent, Commander L. M. Goldsborough, probably short and to the point as became this imposing seaman of the old school, and a presentation of certificates.

Discipline early became the most important factor in the life of the institution because the change in the education of the midshipmen whereby they were required to adapt them-



THE NAVAL ACADEMY, 1870 to 1898 *Cassler*



selves to a systematic routine of education instead of, as formally, doing as they pleased without restraint of any kind, naturally caused in the midshipmen body an opposition against lawful authority that had to be quelled in order that education should continue to advantage. The commandant of midshipmen was, from the start, charged with the discipline of the student body. Especial importance was given to this office by Captain Blake, superintendent for eight years. Its first incumbent was Commander Craven, a celebrated seaman of the old Navy. The *Preble*, *Plymouth*, and *Constitution* were successively the training ships for midshipmen from 1851–1862, and Lieutenant Stephen B. Luce, head of the department of seamanship, in 1862 wrote the Navy's classic, *Luce's Seamanship*.

At the outbreak of the Civil War, resignations of midshipmen who desired to go South began to pour in and the atmosphere of the Academy was one of great unrest. The first resignation of a midshipman desirous of fol-

lowing the fortunes of his State took place in December, 1860. After the fall of Fort Sumter, Captain Blake grew uneasy regarding the safety of the school. The arrival of Northern troops, however, eased the situation somewhat. The frigate *Constitution*, which was aground at low water, was a source of anxiety, as it was feared she might fall a prey to the South. After great efforts she was successfully towed out of the harbour. The fall of the Norfolk Yard again caused the superintendent grave misgivings as to the safety of his students and the Naval Academy, and so the *Constitution*, under command of Lieutenant G. W. Rodgers, sailed for New York on the 25th of April, 1861, thence proceeding to Newport where she arrived on the 9th of May. The officers and their families were transfered from Annapolis to Newport by the steamer *Baltic*, commanded for the cruise by Lieutenant C. R. P. Rodgers. The books, models, and apparatus that could be transported were placed aboard her. The midshipmen were quartered at Fort Adams, off

which the *Constitution* anchored, and, under the command of Commander C. R. P. Rodgers, Commandant of Midshipmen, the Naval Academy was soon again in full swing, studies beginning on May 13th. In September the *Constitution* was moved close to the shore of Goat Island, the fourth class being quartered on board while the third class was moved from Fort Adams to quarters in the Atlantic House. In October, 1862, the *Santee* reached Newport from the Gulf Blockade and became an additional school-ship for the Academy. The course was here made to total three years. The summer practice cruises took on the aspect of actual duty applied to searching for the Confederate cruisers and to keeping constant war watches as a precaution against surprise in any form. In this manner much excitement was furnished. The ships then used were the *Macedonian*, *Marion*, and the yacht *America*.

This removal to Newport nearly resulted in ending the Naval Academy, for it was confronted with the task of turning out from

raw material thoroughly developed officers in practically no time, and without limitation as to their number. From 1861 to 1865, 858 midshipmen were graduated, which large number eventually blocked promotion in such a manner that whereas in 1868 there were lieutenant commanders whose total service consisted of eight years, yet in 1897 there were ensigns whose service in that grade extended over more than eight years. The War Department, which had acquired Fort Severn during the war, was using it as a hospital and would not return it to the Navy, although requests that it do so were made. The result was that the Naval Academy did not return to Annapolis until the summer of 1865, Rear Admiral D. D. Porter becoming the superintendent that fall. His work as superintendent was most notable, and all his reforms and improvements were done thoroughly and well. Military discipline under a logical system became a fact and the Academy curriculum was reorganized. For the first time the fact that engineering was of immense

importance was recognized; athletics were inaugurated in an official manner; recreation in the form of dances and minstrels by the midshipmen was introduced. A chaplain was also added to the staff of the Academy. In Porter's administration the midshipman's word was accepted without reservation as being the truth, a standard maintained to the present time.

From 1866, when instruction in engineering was first added to the course, until 1882, students known as cadet engineers pursued a course devoted to engineering, that differing greatly from the course given the midshipmen. In 1870 a discouraging piece of legislation had been enacted whereby midshipmen at the Academy were made "cadet midshipmen" and thus deprived of the actual rank formerly held by them. An officer or not? No one knew. In 1882 the name *midshipmen* as a designation for the student body was withdrawn by act of Congress and the students became *naval cadets*. Beginning with the class entering in 1873 the course was

made six years, the first four being spent on probation at Annapolis, the last two at sea. From 1889 to 1899 the course given the naval cadets that were selected for engineer duty upon graduation differed *in the final year* from the course given those selected for the line. In 1899 the line and engineer corps of the Navy were united into one body, the line; the graduates of the Academy being assigned to fill the vacancies in the line, engineer, and marine corps. Thus, since the fall of 1899, the education given to all students throughout the course has remained the same.

Since January, 1904, the age of admission has remained at its present status, that is a minimum of sixteen and a maximum of twenty years of age at the time of the examination of the candidate.

On July 1, 1902, came a change, constantly desired by sea officers, in the designation of the students, the old name of *midshipman* being restored and the inappropriate and shore-going title of naval cadet being abolished.

The acts of Congress of the years 1903 and 1906 relating to the Naval Academy deal exhaustively with the subject of hazing and methods for stamping out the practice, which apparently had crept into the student body as a successor in part perhaps to the *duello*. The custom appears to have started in the fall of 1871 when some entering students were treated harshly by upper classmen. Many dismissals resulted from this act of the midshipmen. In May, 1874, the whole third class was deprived of its summer vacation owing to a widespread outbreak of hazing.

Since 1873, when the term was increased from the four years established by the Board of 1851 to six years, the only radical change in the course at the Academy took place in 1912 with the graduation of that class as ensigns, both the diploma of a midshipman and the commission of an ensign in the Navy being conferred upon graduation.

The Naval Academy at Annapolis now educates and furnishes officers for the line,

engineer, construction—through its post-graduate department—and marine corps duties in the Navy. The remaining staff corps are composed of men, specially prepared at other medical, technical, and professional colleges, who win their commissions by competitive examinations. The midshipmen of the old days—too often wild, reckless, and wayward young boys, put into the Navy through political influences as a favour to constituents, sometimes because the boy's parents wished to be rid of a bad youngster—have thus ceased to exist, and their places are filled by highly educated and trained young commissioned officers, the ensigns of our Navy. There is thus at present no sea officer in the Navy with duties that correspond to those of the midshipmen or reefers of the days before the '45's. The wild life and hard times of the "gun room," so vividly told in Marryat's novels and in the reminiscences of some retired English and American naval officers, have ceased being replaced by the very quiet decorum the "junior officers'" mess.



CAPTAIN E. W. EBERLE, U. S. NAVY
The Superintendent, 1916



"Now we've had quite enough of the antique ideas of those chaps who are nothing but sailors, They were well on their way; but this is the day of Science, Æsthetics, and Tailors."[1]

The Naval Academy has now completed seventy-one years of useful life and has made possible the development of the Navy and of the sciences that go hand in hand with such progress. The graduates form the officers upon whom the nation depends to prevent in war an enemy from ever reaching our shores, and to maintain in peace friendly relations with all nations. The service has a record of achievements in diplomacy as well as in war of which it is most justly proud.

The men who have, by their efforts, maintained the high mental and moral standard of the Naval Academy throughout the years of its life, weathering by their able seamanship many a heavy adverse gale, must have a mention in this book even though it be the brief one afforded by a chronological list.

[1] *United States Naval Academy*, by Park Benjamin. New York, 1910, p. 308.

Such a list of the Superintendents of the Academy is, therefore, appended as a conclusion to this short recital of the story of the Naval Academy.

SUPERINTENDENTS OF THE UNITED STATES NAVAL ACADEMY

	Assumed command
Commander Franklin Buchanan	Sept. 3, 1845
Commander George P. Upshur	Mar. 15, 1847
Commander Cornelius K. Stribling	July 1, 1850
Commander Louis M. Goldsborough	Nov. 1, 1853
Captain George S. Blake	Sept. 15, 1857
Rear Admiral David D. Porter	Sept. 9, 1865
Commodore John L. Worden	Dec. 1, 1869
Rear Admiral Christopher R. P. Rodgers	Sept. 22, 1874
Commodore Foxhall A. Parker	July 1, 1878
Rear Admiral George B. Balch	Aug. 2, 1879
Rear Admiral Christopher R. P. Rodgers	June 13, 1881
Captain Francis M. Ramsay	Nov. 14, 1881
Commander William T. Sampson	Sept. 9, 1886
Captain Robert L. Phythian	June 13, 1890
Captain Philip H. Cooper	Nov. 15, 1894
Rear Admiral Frederick V. McNair	July 15, 1898
Commander Richard Wainwright	Mar. 15, 1900
Captain Willard H. Brownson	Nov. 6, 1902
Rear Admiral James H. Sands	July 1, 1905
Captain Charles J. Badger	July 15, 1907
Captain John M. Bowyer	June 10, 1909
Captain John H. Gibbons	May 15, 1911
Captain William F. Fullam	Feb. 7, 1914
Captain Edward W. Eberle	Sept. 20, 1915

CHAPTER II

THE CANDIDATE

"*I believe in celerity.*"—FARRAGUT.

THE instant a boy becomes possessed of an appointment to the Naval Academy he is a "candidate" and lives and thinks as one, being spoken of by that designation, emphasized with a little condescension and high mightiness by the more fortunate boys already wearing the uniform of the naval service as midshipmen. Candidates for midshipmen are boys from sixteen to twenty years of age who come from all parts of the country, all walks of life.

The appointments of midshipmen to the Naval Academy are now made under an Act of Congress approved February 15, 1916, which reads:

"An Act Providing for an increase in the number of midshipmen at the United States Naval Academy."

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter there shall be allowed at the United States Naval Academy three midshipmen for each Senator, Representative, and Delegate in Congress, one for Porto Rico, two for the District of Columbia, ten appointed each year at large, and fifteen appointed annually from enlisted men of the Navy as now authorized by law."

In July, 1916, Congress, in its Naval Appropriation Act passed in the interest of preparedness for war, amended this law relating to the appointment of midshipmen to the Naval Academy by allowing the President fifteen appointments annually instead of ten; allowing the Secretary of the Navy twenty-five appointments annually instead of fifteen from the enlisted men of the Navy; and allowing the Governor General of the Philippine Islands to designate one Filipino for each class who upon graduation will not be entitled to a commission as an officer in the United States Navy.

Under the above law and its amendment the maximum number of midshipmen that may be present at the Academy at any one time is 1762. At the opening of the Academic Year 1915–1916 when the maximum permitted by law was 1094 there were present 918 midshipmen. Therefore in the future under the present law the maximum number of midshipmen at the Academy will probably be approximately 1478.

Whenever a midshipman drops out during his course for any reason, the Congressman representing the district from which he was appointed is notified by the Bureau of Navigation in order that he may designate an appointee to take the next entrance examination to the Academy and thus fill at the earliest moment the vacancy in the regiment of midshipmen.

A boy is nominated to the Bureau of Navigation for an appointment as a Midshipman in the Navy of the United States by the person authorized by law to do so, and this Bureau then sends the nominee a letter of

notification and permission to take the entrance examinations. Several boys are usually nominated for each appointment, a principal and successive alternates. They must then accept the appointment by filling out and signing the following letter:

.....

....., 191

SIRS:

I hereby acknowledge the receipt of your communication of..... giving me authority to report for examination as to my qualification for appointment as a Midshipman in the United States Navy, and to inform you of my intention to report accordingly.

In consideration of the foregoing and of my appointment as a Midshipman in the United States Navy, should I receive such appointment, I hereby engage with the consent of my parent (or guardian) that I will serve in the Navy of the United States during the pleasure of the President of the United States, unless sooner discharged by competent authority.

Respectfully,

.....

(*Each name must be written in full*)

The action of my.....in signing the above meets my approval, and should he receive an appointment as a Midshipman, I hereby give my consent to his acceptance thereof; and I hereby give him my full permission to serve in the United States Navy during the

pleasure of the President of the United States, unless sooner discharged. He was born at.....
....., on the.....day of.....

.....

To the Bureau of Navigation,
Navy Department,
Washington, D. C.

To obtain an appointment in many cases takes years of trial and work and sometimes entails final disappointment. Usually the coveted appointment comes as the result of winning a competitive examination held by senators and representatives and open to everyone who is a legal resident of the State or district to which the appointment to the Academy is apportioned. The President also holds competitive examinations for the fifteen appointments per year that he is allowed by the law. Of late years the boys allowed to compete for these appointments are limited to the sons of Army and Navy officers, for these have practically no other means available for securing an appointment in view of the fact that seldom does a service family possess a legal residence. An enlisted man of

the Navy or Marine Corps is entitled to take a competitive examination for admission if he is not over twenty years of age on the date of entrance to the Naval Academy, and at that time is a service man of one year's standing, appointments for twenty-five such men being available to the Secretary each year. Those enlisted men who signify their desire to compete for an appointment are accorded special encouragement by the officers under whom they are serving in the way of urging to study, excusing from ship's duties to do so, and giving special instruction. The experience gained while serving before the mast is one of the greatest value to the embryo officer as he acquires an insight into the habits of thought and living of the enlisted man that in after years makes him a better leader of men than he could become through any amount of education. When such a man makes good he has a right ever after to point with pride to the fact that he has made the wonderful step, so dear to all seamen, "from forecastle to cabin." Out of sixty such men



VIEW OF ANNAPOLIS AND THE NAVAL ACADEMY FROM THE DOME OF THE CAPITOL



who took the examinations in 1916 seventeen passed unconditionally. This means twenty-eight per cent.

After a boy secures and accepts his appointment as a candidate—the most difficult step towards becoming a naval officer—both he and his parents begin to anxiously question themselves as to whether or not he is sufficiently prepared to pass the entrance examinations. Many excellent schools make a special point of pushing boys through these tests. Such extra coaching is hardly required if one's grounding in grammar and the first year in high school work is thorough and well understood. Should the candidate decide that he cannot unassisted sufficiently well review his work or cover any advance subjects for entrance, he should take a course of from one to three months at one of these preparatory schools.

A review in painstaking detail is of course an essential and must not be neglected. If a boy knows either French or Spanish and has already studied much of the subjects

taken up in the first-year course, he has a great advantage. Languages require, when absolutely new to one, too much time in preparation, time that should be spent on other subjects. If a boy does not know either of these foreign languages, let him utilize his spare time and study one even though ever so little.

The boy upon entering the service should be made to realize that time counts in everything that he is to do even to the inclusion of the entrance examinations. One of the important lessons to be taught by the course at the Academy is that decisions must not only be correct but that they also must be made quickly. Surely an enemy will never wait to attack while one is indecisively making up one's mind as to the proper procedure. Such training cannot begin too soon. *Sufficient* time is allowed for the entrance examinations and accurate work is expected. To those reading the papers an interesting insight is given to the methods of instruction in use in the different sections of this country, the compilation of which observations would furnish useful data.

It is well to emphasize the need of modern methods of solving problems, as the long involved methods of extracting roots of numbers, unfortunately still taught in some grammar schools, will not do; such antiquated methods being a veritable waste of precious time. Also, in solving problems, a statement of the same should be made; for when this is done it invariably will be discovered that many factors cancel out and but a moment will suffice to solve problems that have very involved statements.

Many boys make a poor showing in the mathematical subjects. These must be known thoroughly in preparation for the further studies in algebra and geometry beyond the scope of the entrance requirements. After having demonstrated his knowledge of the subjects prescribed for entrance, by successfully passing the examinations based upon them, it is presumed that the new midshipman is prepared at once to proceed with topics beyond those requirements in the courses in advanced algebra and solid geometry. The

importance of thorough preparation in mathematics to the full extent of the requirements set forth in the regulations governing the examination and admission of midshipmen is great; for, after admission to the Naval Academy, the character and amount of instruction from the outset leave little or no opportunity for one imperfectly fitted to make up his deficiencies and render it impossible for him to derive full benefit from his instruction or perhaps even to maintain a satisfactory standing.

The foregoing points cover certain important items that have often come to the attention of officers when they are associated with students desirous of entering the Naval Academy.

The entrance examinations follow closely the same lines from year to year. The order of subjects is changed at times, but upon request the Bureau of Navigation will notify candidates as to the order in which the subjects will be given out.

Two examinations are held yearly, the first

beginning the third Tuesday in February, and the second on the third Tuesday in April. The choice of taking the February or April examinations rests with the individual, who should decide with the knowledge fixed in his mind that, if he takes the February examinations and fails he is debarred from renewing the attempt in April. This ruling is fixed by law for the reason that the staff at the Academy is inadequate in size to handle two examinations a year for every candidate. This rule can be departed from only by the action of the Academic Board, an action that is taken seldom and only under unusual circumstances. The candidate can try but once for a particular class, a decision that is logical from all points of view, but he may try to enter once each year as long as he remains eligible by reason of his age. If the candidate is well grounded, it is wise to take the February examinations and then enjoy a rest prior to the physical examinations in June. If not well prepared in February the April examinations should be awaited.

The examination questions are drawn up by the officers of the Academy, and one copy is forwarded by the Superintendent to the Civil Service Commission at Washington. This commission, upon receipt of single copies of the questions, has them printed in their customary form for presentation to the candidates. As the officers of the Academy never see these printed sheets, even for proof reading, errors are sometimes made in the printing, one question in geometry being recently so mutilated that it was absurd. Upon the completion of the examinations in compliance with the regulations of the Civil Service examination, all work performed by the candidates, including all sheets of rough or scratch work, surplus blank sheets furnished for use in answering the questions, and even the soiled blotters the candidates may have used, are collected by the examiner who has supervision under the Civil Service Commission, and are forwarded direct to the Academy for examination and for grading of the work by instructors there.



CARVEL HALL HOTEL STATE HOUSE DOME ST. ANN'S SPIRE THE CHAPEL *White Studio*

SUPERINTENDENT'S QUARTERS

A VIEW IN THE YARD



The examinations occupy three days. The final decision as to the admittance of a candidate is made by the Academic Board of the Academy. This procedure gives fair play to all and is typical of the endeavour made throughout the service to treat all alike with impartial justice and greatest consideration.

The different home surroundings and conditions under which the candidates take their examinations affect the results somewhat. Recently a young man, fearing that he had not obtained a passing mark, wrote the Superintendent requesting another trial on the ground that he had been obliged to write his papers while sitting in the sorting or workroom of a western village post-office. As the examination took place during rush hours, when every person, from miles around, came for his mail, the candidate was not only annoyed by questions as to what he was doing and why he was doing it, but also by the disparaging remarks made by these neighbourly friends, who, though meaning well, blundered sadly.

"Why waste your time, Jack, at this stuff, you never can pass?"

"Go home and get to work, your place is on the ranch, not at sea."

In addition he was trying to spell words from dictation by the postmaster, who grotesquely mispronounced many of them. When it is remembered that a misspelled word deducts from the mark two tenths for each of the first five misspelled and one tenth for any additional misspelling, thus allowing but ten words of the forty given to be misspelled if the candidate is to pass, such conditions are surely discouraging to earnest boys who are struggling hard to enter upon a life profession. Spelling with a weight of one and grammar with a weight of two are combined to give the mark in English, so that a fair knowledge of grammar quite materially helps the poor speller to obtain a satisfactory mark in English. In the case just cited the boy was passed. Even the largest cities are not exempt from criticism on the pronunciation of the examiner. In April, in one of the edu-

cational centre cities in the East, the word "bicycle" was pronounced "beesi'ckel" by the Civil Service Examiner to the despair of the candidates, until one, by question, brought out the fact that it was a machine with two wheels, after which its spelling became plain sailing. To pass the entrance examinations the candidates must obtain a 2.5 on a scale of a 4.0 as the perfect mark. This is but 62.5 per cent., and is thus materially lower than seventy-five per cent required in the entrance tests for most of the colleges of the country.

Until recent years, all entrance examinations were held only at the Naval Academy itself, a rather expensive proceeding for the unsuccessful candidate. To avoid this expense the practice of holding examinations in four hundred and eight cities and towns, throughout the whole country was inaugurated.

The examinations are not hard or long as these recent results bear witness: In February, 1916, examinations out of 227 examined candidates, 99 were passed; and in April, 1916, out of the 1216 candidates who submitted

papers, 453 were passed for entrance. As Congress had enacted but a short time prior to this a law providing for a large number of additional midshipmen, the majority of the boys who presented themselves as candidates in the April tests had not expected appointments and therefore really had had an unusually short time for preparation.

It is well to study carefully the detailed regulations for entrance, together with the physical and mental requirements given in Appendix II of this book. It is worthy of note that the text-books from which the examinations in English subjects are compiled and those which express fully the extent of the ground covered by the mathematical subjects are listed in the regulations governing admission to the Naval Academy.

To avoid a most heart-rending disappointment, namely that of being rejected by the medical board after having passed the mental requirements, a physical examination given by the candidate's home physician is an essential. This precaution should not be

omitted. Such an examination may often be obtained at one of the many Naval Recruiting Stations that are to be found in many cities throughout the country. If the candidate at any time should be in the vicinity of Annapolis, an unofficial preliminary examination will be made by the medical officers of the Academy upon request to the Superintendent.

If the candidate passes mentally, he will receive an important looking official document informing him of that fact, and directing him to report to a Board of Medical Examiners at Annapolis at a date early in June, usually the first week, for his physical examinations. This date can be advanced by request to the Superintendent.

The physical examination is held in the Sick Quarters on the fourth floor of Bancroft Hall as the dormitory or quarters of the midshipmen is called. The presence of three uniformed surgeons does not greatly contribute to the candidate's peace of mind. The examination is thorough and is proceeded with

quickly. The candidate leaves the room without official information as to his success or failure although he will naturally be almost certain in his own mind of the result.

About seventeen per cent. of the candidates fail upon their first physical examination due to defects that can be readily corrected by treatment. A candidate should take the time before reporting to have diseased or enlarged tonsils and adenoids removed, and to have his teeth put in thoroughly good condition by capable dentists. Deafness sufficient to cause failure to pass is often due to causes that proper treatment will readily remove. These defects are common causes of rejection. As a close estimate it may be stated that about eight per cent. of the candidates are finally rejected physically.

At the time of one's arrival for enrollment, the latter part of May or early June, the quaint old town of Annapolis is at its best, being full of the gay social life attending upon the graduation from the Naval Academy of some two hundred midshipmen, the majority having



THE STATE HOUSE



Photo by McAboy

A COLONIAL RESIDENCE, ANNAPOLIS

THE BRICE HOUSE



parents, relatives, and friends present to add to and to take part in the social functions of the graduation week, which ends with the departure on leave of the graduates and the sailing of the three undergraduate classes upon the three-month's summer cruise.

While wandering about the grounds the candidate will doubtless be accosted by some superior beings in the shape of midshipmen, who, nevertheless, feel sympathy for the candidate in his strange surroundings:—"Hey, mister! What made you want to go to sea?" "Say, will you look at that candidate! He is about the ratiest bird I've ever laid eyes upon! The Navy has certainly gone to the dogs," etc. etc.

Annapolis, at present a town of 8609 (census 1910), has been the capital of Maryland since 1694 when the State government was moved to Anne Arundel Town,—now Annapolis—on the Severn from St. Marys, located on the river of that name, just inside of Point Lookout on the north side of, and near the mouth of the Potomac River. The can-

didate takes his first lesson in navigation here, and no easy task is that of learning to navigate the streets of this provincial town. These streets, which are rough with uneven sidewalks that are blocked at unexpected places by the old-fashioned house stoops, radiate as the spokes of a wheel from two circles located not far from each other; those of the State House and of Saint Anne's Church. The intersections of these streets complicate matters, and, as if this were not sufficient to confuse a stranger, many alleys, some dignified by names, as Wayman's Alley, Tate's Alley, Andrew's Al'y, Hyde Al'y, make numerous short cuts. Cases of people becoming lost in this small city are not unknown. The names of the streets of Annapolis remind one of English history, for one walks on the Duke of Gloucester Street, King George, Prince George, and Hanover; and two of London's highways, Fleet and Cornhill, were added to this little English town as also was Chancery Lane.

Old colonial Annapolis offers much of

interest, containing, as it does, the finest examples of pre-revolutionary brick mansions, once the homes of the very gayest of Colonial life in the days of 1750, when not a town of England could boast of so many fashionable and handsome women. The Ridout house built by John Ridout, Secretary to Horatio Sharpe, the famous Colonial Governor of Maryland; Acton, with spacious grounds sloping to the Spa; the Scott; the Carroll; the Brice; the Paca, now the hotel known as Carvel Hall; the Harwood; the Chase, and the Ogle residences were all erected between 1740 and 1770, and represent much of interest and beauty.

The State House is of Colonial date, having been erected in 1772–1774. The picturesque dome, the landmark of the city, was not added, however, until after the Revolution. In this building, on the 23d of December, 1783, General Washington resigned his commission as Commander-in-Chief of the Continental Army, and here also the treaty with Great Britain was ratified in 1784. This structure alone furnishes

much of interest to the candidate as he looks about its rooms, at its paintings, and from the dome takes in the exceptionally beautiful view afforded of the bay, the city, and the Naval Academy.

Saint Anne's Church, the starting point of the second series of radiating streets, contains the silver communion service and alms basin made by a court silver-smith of London and presented to the church by King William III in 1695. The present structure is on the site of the first church, though it dates only from the year 1859.

Saint John's College, with its magnificent trees, is a beautiful spot, rich in historical traditions. This college dates from 1694, when it was known as King William's School, the present name being given it in 1784. The most famous tree on its campus is the Liberty tree, under which, in 1652, was made a treaty with the Susquehannocks, and where from 1770–1775 many assemblies of patriots met.

Really what more fitting place for the Naval Academy could be found than this town of

Annapolis with its memories of greatness ever to the fore.

Annapolis explored, the candidate awaits the day of his entrance to the Academy. *Before entering he must provide himself with the entrance deposit for the necessary outfit of clothes, uniforms, bedding, books, etc. Many boys have difficulty in furnishing the three hundred dollars that is required.* One young man, promised an appointment, had no means of obtaining this amount and so he conceived the idea of enlisting in the service as an apprentice seaman. He did so at the nearest recruiting station, served some time in the Navy, and saved his salary carefully. As the time for the examination approached, he was ordered to the station ship at the Academy, reached his destination at Government expense, and took the test there. By this means he had saved enough to make the required deposit.

The official notice as to the result of the physical examination, soon arrives, and if all has gone well on this examination the future

officer on the day after it reports to the Superintendent's office where he is directed to the office of the Paymaster to make the required deposit. In return a receipt is issued that he is directed to show at the office of the Superintendent in the administration building. A time is then indicated when he is to report and take the oath under the personal eye of the Superintendent. In signing this document the candidate for the first time sees the title "Midshipman, U. S. Navy" beneath his name. A proud and solemn moment is this of swearing in and one often remembered as being the start in an honourable profession, one that always exacts ones' best efforts, both because of its past traditions and its present needs.

OATH

UNITED STATES NAVAL ACADEMY

I,....., of the State of.... .....aged..... years, having been appointed a Midshipman, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance

to the same; that I take this obligation freely, without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office on which I am about to enter: So HELP ME GOD.

.....

Midshipman, U. S. Navy.

Then the registration is made under the eye of the Secretary of the Naval Academy; among many entries required is that of the midshipman's religious belief. His next duty is in the nature of life insurance. As Congress has made provision whereby the dependent relatives of persons in the naval service who lose their lives in the discharge of duty receive a sum equal to the pay of the deceased for six months, the midshipman must make out a "beneficiary slip" stating to whom this money is to go in case of his death. These details completed, the midshipman will probably never again enter the Administration Building during his course unless it be as officer of the day to bring the log (the record or journal of the weather and events of each day) for the signature of the Superintendent, to receive from the Superintendent a commis-

sion as a midshipman officer in the regiment, or in the unfortunate event of his having committed a grave breach of the regulations requiring a personal interview with the Superintendent. Now he proceeds to Bancroft Hall, reports to its executive officer, a lieutenant commander in the Navy, who gives him his assignment to a room and a direction slip, together with a regulation book, a requisition book, and some leaflets to study at his leisure. This direction slip contains instructions or listed tasks which the midshipman must do consecutively, checking the completion of each one until all are finished, when he will be ready to take up the summer routine of drills and instruction.

After reporting to the Duty Officer, as the naval officer in charge of the discipline of the building is called, he hunts up his room and places his baggage therein. The candidate has thus become a midshipman, a member of the fourth class, and, in the language of the Academy, a "plebe."

CHAPTER III

THE NEW MIDSHIPMAN

"Obedience is the soul of the Navy."—CRADOCK.

THE title "midshipman"—the most nautical thing about the Naval Academy—originated in the early days of the navies when ships began to be officered and manned by sailors in the place of soldiers. The young boys then placed upon ships as understudies to the officers were utilized to carry orders from one deck to another, not only with the purpose of instructing them in the manner in which the routine of a ship of the line was conducted, but also of insuring that orders given by the officers were intelligently delivered to the persons to be affected thereby, which persons were out of hearing distance. These old ships had many decks. The officer

in charge of the vessel was habitually either on the spar deck or on the poop. The youngsters during drills and evolutions were stationed near the break of the poop; that is near the mid-length of the ship, or midships, as the term is; hence the name midshipman naturally followed. These midshipmen being more agile as well as quicker-witted than older seamen were most efficient as messengers, and they grew in importance and progressed to the rank and commission of line officers. As these appointments were the easy road to a commission, men of high social or political position and wealth often obtained such positions for their sons. One of the stations of midshipmen was aloft where they led the men and directed the reefing of top-sails; hence the word "reefer" sometimes applied to them. The short coat, or reefer, now worn by midshipmen was adopted as being suitable for work aloft and received its name from this use.

Possibly the new midshipman after finding his bare room and dropping his suit-case

there does not ponder long over these things, for, as a matter of fact, there is not much time in which to think. He has entered upon a busy life, one that will keep him on the go continuously, and one that will do much to lessen any feeling of homesickness he may suffer. If the new midshipman before his entrance to the Academy, has not read Marryat's *Midshipman Easy* and *Peter Simple* in order to become truly "sea-going," he will find that he will be kept so busy afterwards that this part of his education must be omitted and he must become a sailor without it.

When he visited the office of the executive officer of Bancroft Hall, a direction slip was handed to him. Glancing at it he sees that he must now proceed to the midshipmen's store and equip himself with the necessary clothes and bedding for his summer's work, in other words he must "draw his outfit."

Articles in the midshipmen's store are sold as close to wholesale prices as possible in order to help reduce the cost of living to the midshipman who, immediately upon signing the

oath, commences to receive a salary of fifty dollars per month. This money is not paid direct to the midshipman, but the account of it is kept by the pay officer and the cost of all articles drawn is charged against it. In addition, a sum of one hundred and eighty dollars per annum is withheld in order to pay for the graduation uniforms, making a total reservation of not less than seven hundred and twenty dollars. This wise provision together with the requirement that no debts be contracted by midshipmen insures that graduates may enter upon their sea-service as junior officers free from debts. Parents are requested not to send money to their midshipmen sons. Thus all midshipmen are put upon the same financial footing and are compelled to acquire the habit of taking care of their salary. A pass-book showing the status of his account is submitted to each midshipman for his examination, checking, and signature each month. A mess entrance fee of thirty dollars, which is returned when the midshipman leaves the Academy, is set aside in order to



ENTRANCE TO THE QUARTERS



Armstrong

THE NAVAL SCHOOL TABLET



cover napkins, table-cloths, crockery, and table-ware necessary for the midshipman. The monthly cost of table-board and laundry of each midshipman averages about twenty-four dollars, this being charged to his account and indicated on the pass-book. In 1874 this cost was about twenty dollars, but food stuffs are far higher now than they were then and the fare is far better. During the first year at the Academy a midshipman is allowed and paid one dollar per month for his spending or pocket money. This amount increases each year until in his first-class year it reaches three dollars.

Outfit being drawn, the plebe returns to his room and stows his locker and closet, being guided in this complicated operation by the minute directions contained in his copy of the *Regulations of the U. S. Naval Academy*, the "Blue Book" or the "Plebe's Bible" as it is variously designated. Several trips to the store to transfer the outfit to his room will be required unless our new midshipman is fortunate enough to possess a little small change with

which to hire a corridor boy to help bring the material drawn to his room and even to stow his locker, this last being of great assistance. To make a bed is sometimes a task that comes hard to one; yet ability, even in this branch, pays, for it saves time that can be profitably devoted to study, as well as prevents the acquisition of demerits with their attendant privilege restrictions.

The midshipman now shifts into his khaki coloured flannel shirt and khaki trousers, and assumes the white canvas hat with a blue border around the upturned brim. This is his attire for the greater part of the time prior to the beginning of the academic year in October. Then he proceeds to the contract tailor shop in the basement and is measured for uniforms. This little man hustles him along with the celerity of one who has done such work for many, many years. How in the world can clothes made on such quick measurements ever fit? But the midshipman will discover that they can and will. The master-at-arms is visited and arrangements

made either to turn in to him for safe keeping or to send home all civilian clothes within twenty-four hours. These masters-at-arms are petty officers, formerly of the Navy, but of late years generally civilians, who regulate the care of Bancroft Hall, overseeing the work of the men who clean corridors,—the corridor boys or "mokes" as they are called in the Academy parlance,—and the various activities of express offices, trunk and storage spaces, kitchen, and so on. They are helpful always to the new midshipman, who encounters no harsh words these days, the rule of the sea and the men on the sea having grown milder with the years even though it be none the less strict and efficient. It is no longer a requirement that one should be scared to death in order to acquire the habit of obeying promptly.

The bugle-call for the mid-day meal has possibly interrupted his work before he has shifted into his uniform, and the first formation with members of his class takes place. The civilian clothes or "cits" make him a marked man; he feels that his awkward points

are accentuated thereby. Formations for meals and drills, in good weather, are held in the esplanade of the quarters facing the academic group of buildings. Here the hot June sun beating on the buff vitrified paving bricks and cement blocks hurts the eyes and starts the tan. After muster is over, and the various orders and details published, the midshipmen march around the terrace to the mess hall. This is a big, bare, well-lighted hall on the ground level. Hung to the various centre supporting columns are gilded footballs, each one indicating a hard won victory over the West Pointers. A Navy goat, stuffed, is in a glass case over the doors. As this goat was one of the most successful mascots of the Navy football team, his memory is thus perpetuated. A goat is always taken to the West Point game, the position of keeper of the goat being considered an honourable and necessary post, as many attempts to steal the said mascot have been made by the Army. Along the beams and borders are secured half models of various vessels such



White Studio

IN THE ROTUNDA OF BANCROFT HALL



as the *Constitution*, the *Franklin*, the *Lancaster*, the *Nipsic*, the *Ossipee*, the *Worcester*, and some eighty others. Through the windows and across Farragut Field is an attractive view including the harbour of Annapolis with its busy fishing fleet and small cargo schooners, Chesapeake Bay with the deep-sea traffic passing, the Greenbury Point lighthouse, and Kent Island across the bay. Meals are hearty and nourishing, being served quickly by the busy coloured waiters, or mess-hall boys, amidst a great clatter of dishes and buzz of conversation. Here the new midshipman will begin making friends of the other members of his class.

After the meal the plebe continues his settling. One by one he checks off on his list the work as completed. When done, he finds that he is automatically settled or "shaken down," ready for work. Once shifted into his khaki, and his civilian clothes—"cits"—sent home, the midshipman finds his former free life changed to one of the routine type that the academic life of necessity requires.

A midshipman is not permitted to possess or to use tobacco in any form until he has begun his fourth year, that is until he has become a first classman, when the privilege of smoking while in Recreation Hall (popularly known as "Smoke Hall") is granted him. No debts of any kind can be contracted lawfully by a midshipman, and he must inform the authorities as to any debts contracted before entrance that he is under obligation to pay. Tobacco is therefore turned in; and reports in writing, one covering this fact, the other stating his status as to debts and the disposition of his civilian clothing, are then made to the Commandant of Midshipmen. These reports are the first written ones the new midshipman has to make and again with the help of the midshipman officer of the day or the regulation book, the task, after several trials, is completed successfully.

The athletic officer is also waiting to question the plebe as to his experience and abilities in the various lines of athletics, in order that he may place him properly in athletic

squads and athletic teams. A blank form is filled out, and the future athletic career of the midshipman will be guided in great measure by it.

The marking of clothes with the stencils furnished is usually a dirty job; and ink on clothes, on the deck of the room, and elsewhere, everywhere and anywhere that it ought not to be, is the inevitable result, together with the odour of an ink in ones clothes that clings for days and unmistakably pronounces one a plebe. He makes an oral report to the Duty Officer when he has completed the stowing of his locker and the marking of his clothes.

For a companion—or companions, as three midshipmen may have to room together beginning October, 1916, on account of increase in numbers—in his room he may choose whom he likes that is available, or, in default of choice, roommates are assigned by the Executive Officer of Bancroft Hall.

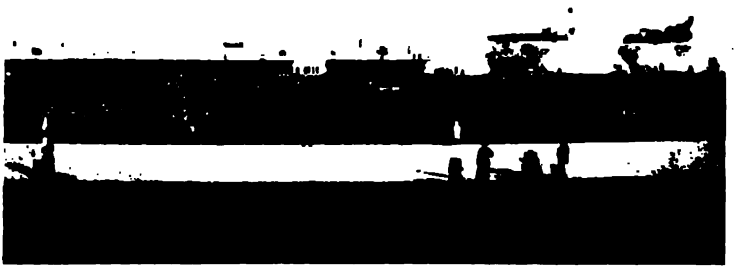
The Executive Officer of Bancroft Hall at 9 A.M. on the day after the plebe enters, will inspect the plebe's cap and mackintosh. The

cap certainly will not pass the scrutiny of this officer if it be the least bit small. The article of the regulations on hazing now must be thoroughly read, and the new middy will doubtless read many more regulations with not a little wonderment as to whether he can *ever* keep from being put on the "pap" or report sheet. Perhaps all the above is completed by evening roll-call; in any event it is expected that a substantial proportion has been, and that the next afternoon the midshipman is completely ready to take up the routine of duties.

At 10 P.M., hearing taps on the bugle he turns in, his bed made none too well unless he has had previous practice, and drops off to sleep after the midshipman in charge of the floor has inspected his room, put out lights, and made sure that he has turned in and is quiet. The report of the morning gun, followed by the *noise* of the bugle and drum, rouse him at six-thirty the next day, shortly after which a classmate on duty makes an inspection to see that he is up and dressing



INFANTRY DRILL



ARTILLERY DRILL





for, if not, he must be reported. Morning roll-call sounds at six-fifty. At this formation throughout the year is read the conduct report, which embraces the names of all midshipmen who have in any way been delinquent the preceding day, together with the offence against discipline, that they have committed. Breakfast follows immediately and, when over, the midshipman's room must be swept out, bed made, and book shelves, table, and lockers put in perfect order. The dirt and waste from the room he sweeps into the large corridors, which are cleaned later by the corridor boys.

The drill routine and practical instruction during the summer is arranged so as to give everyone the same amount of instruction in subjects that will be of the utmost value to officers in their service life. One is thus kept busy both mentally and physically, the latter work being sufficient to bring aches to many bones and sound sleep to all at the close of the long hot summer days.

The day is divided into periods comprising

these hours:—8 to 9.30 A.M.; 10 to 11.30 A.M.; 1.30 to 3 P.M.; 3.30 to 4.45 P.M.; and 8 to 9 P.M. Sufficient time is thus allowed to return to quarters between each period and make any necessary shifts in uniform.

The class is divided into four groups or battalions for administration and drill purposes. The battalions are further subdivided into companies when their size renders them unwieldy. In order to give the organization a fair start, the plebes who have had previous military training or who show real aptitude for command are chosen for acting company and petty officers by the various drill officers, whose eyes are keen for assistants of a standard that will make the drill run smoothly. These battalion groups form the unit for all duties. One marches to meals, to instruction, and to drills in these groups. These battalion groups form the fourth-class regiment. Shifts are made in the assignment of acting midshipmen officers and petty officers as one or another shows himself worthy of promotion or of meriting reduction. By the end

of September this regiment of fourth classmen is exceptionally well drilled, and its midshipman lieutenant commander, "plebe four striper," is the best man in the class from the military point of view. To have held this position is an honour the memory of which will always be cherished.

Until 1916, the largest class entering had comprised 303 members; now, however, the fourth class will contain approximately 632 members, 481 having been admitted up to July 8, 1916.

In the case of rifle practice the two forenoon periods are combined. The Academy owns two excellent rifle ranges, one of six hundred and the other of one thousand yards, both located across the Severn from the Academy and separated from each other by Little Carr's Creek and by a picturesque, wooded ravine that is, in its wild forest beauty, the place of greatest scenic attraction in the locality of Annapolis. The midshipmen going to this practice march from a formation and muster held in front of Bancroft Hall to the

Santee's dock, the name of this old ship being perpetuated even though the ship itself is but a memory.

This vessel, the *Santee*, had a history almost as long as that of the Naval Academy, not as a man-of-war but as a station ship in the Severn; so perhaps a short digression as to her career may not be out of place. She was a political ship built piece-meal about election time in recurring years by prospective voters who had to be taken care of by their representatives in Congress. Laid down in 1820, she was launched in 1855, and was commissioned June 8, 1861, for war service on the Gulf blockade. What a record in speedy war craft construction! This duty was varied by one trip to Vera Cruz early in the spring of 1862. Having proven an unsuccessful ship, after leaving with the blockading squadron all stores not required to take her to Boston, she sailed for that port August 1, 1862, arriving there the 23d of the same month, sailing thence that October for Newport, became a part of the Naval Academy remaining in

Newport until the summer of 1865, when, together with the school, she returned to Annapolis and on August 2, 1865 anchored off Fort Severn. For a time she was a gunnery ship, and then for years housed the "plebes" during the summer—they thus learning ship life at first hand—until the return of the upper classmen from leave on September 30th. As a punishment, habitual smokers and those who leave the Academy limits without authority, termed "frenchers," were quartered on the *Santee*, apart from the life of their classmates, to endure the luxurious comforts of a hammock on a cold winter's night.

> "*When in trouble and disgrace*
> *Who protects the hardened case?*
> *Who will, with parental care,*
> *Shelter, shield, and keep him there?*
> *The 'Santee'.*"

This use of the *Santee* was discontinued in 1905, the vessel being then pronounced unsanitary. Until the arrival of the present

[1] "The *Santee*," by C. S. Alden, *Proceedings of Naval Institute*, vol. xxxix., p. 778.

station ship, the *Reina Mercedes*, on October 1, 1912, offenders meriting restriction to the *Santee* were simply placed under arrest in their rooms.

After fifty years of consecutive duty with the Academy the *Santee* sank on April 2, 1912. She was soon afterwards sold for her copper, and left Annapolis May 8, 1913, to be burned at Boston. Her name only survives as that of the splendid concrete wharf built to replace the old wooden one of her time, which collapsed soon after the *Santee* sank.

To return to the summer routine. On arrival at the range, the midshipmen commence their course of small arm shooting, using the standard service rifle, pistol, and machine gun. They are taught the use of the sights, the drift allowances, effect of wind, and the fine points necessary to develop an experienced rifle shot. Marking shots, shooting, cleaning guns, and so on, occupy the midshipman's attention, and his period on the range is happy, free from close restraint, and, as a result, the time passes all too quickly.



THE RIFLE RANGE

Armstrong



Infantry drill, the making of discipline, usually comes in the first period so that the heat of the summer days may be avoided. The class is separated into many squads, but as soon as the rudiments of the manual, facings, and marchings are acquired, the new midshipmen are placed in the main companies.

For swimming instruction, the proficient swimmers are allowed the second period on certain days in which to practice from the float and the spring board across the Severn. Everyone before graduation must pass an examination in swimming—that is a rigid requirement and failure to learn quickly means instruction during recreation hours. As the years go on, when one has wider interests and more friends, such time is begrudged; so the new middy had best put forth all his efforts and learn to swim. Swimming is also taught in the tank in the gymnasium where able instructors are in attendance, anxious to make one learn in spite of everything. In the summer season, however, prior to the arrival in August of the swarms of jelly fish

that then infest the waters of the Chesapeake, and that are equalled in quantity only by those of the Gulf of Paria, the most pleasure is obtained in the outdoor swimming across the Severn.

Seamanship is confined in scope to handling boats under oars and under sails. When examinations in both sailing and swimming have been successfully passed, permission can be obtained to use, during recreation hours, the knockabouts and catboats that are provided in liberal numbers for the use of the midshipmen. A sail on the Severn River and Chesapeake Bay is a most enjoyable pastime and one that is always utilized by those who become competent small-boat skippers.

The pulling cutters are double-banked, ten-oared boats, whose oars after an hour's pull in the sun seem like veritable trees, and sturdy oaks at that. There is much to be learned beside the mere pulling of the boats, however, for one must know how to bring the cutter alongside a dock or vessel and to

handle it in various situations. Rules of the road must be learned and applied. The capsizing of boats under sail occurs not infrequently. Such capsizings are sometimes unwitting, the result of inexperience, but in other cases undoubtedly premeditated with the object of obtaining an unscheduled swim.

In marine engineering the handling of the steam launches, running the fires and engines, is taught, together with the operation of motor boats, their faults and peculiarities. Models of engines and boilers are explained and the general idea of the motive power of vessels is given in a way that is very easily comprehended.

Four afternoons in a week, in the fourth period, gymnasium instruction according to the Swedish system is given. The rudiments of wrestling and boxing are taught. This course is of immense benefit to the physical well-being of the individual.

The evening period—8 to 9 P.M.—is devoted to reading, lectures, or entertainment. On Mondays the lecture discusses the discipline

and the regulations of the Academy, an explanation of the various rules and the reasons for their existence being given. On Tuesdays the period is devoted to reading. Each midshipman is required to read four hundred pages per month in certain standard works that are prescribed by the Department of English. For the entertainment of the class on Wednesday evenings moving pictures that include one of the films of current events are shown in Memorial Hall, the reading-room of Bancroft Hall. On Thursdays the lecture given under the direction of the English department treats of naval history, English literature, or other timely topics. Occasionally this period is utilized by a competitive debate between battalions, some naval problem being selected. Friday evenings are allotted to the use of the chaplain or the medical officer for instructive and beneficial talks to the fourth classmen. Saturday during this evening hour the band plays in the auditorium where, when so inclined, the midshipmen have stag dances upon the excellent floor.

These strenuous days end with the warning call at 9.55 P.M., followed five minutes later by taps when all must turn in. Seldom will any time be lost by the plebe in getting to sleep.

After the greater portion of the class has entered, and the battalions have thus approached a workable size, an athletic contest is arranged wherein all the battalions take part; the prize for the winner being a "liberty" on a suitable afternoon in September. These contests begin about the last week in August and comprise:

Track and field meet, pulling cutter races, knockabout race, swimming race, wrestling, boxing, tennis matches, and baseball.

These contests make this week a lively and interesting one, for there is great rivalry between the midshipmen of each battalion because of their deep loyalty to the organization of which they are a part. Points are assigned for the first three places in each contest. The battalion winning has to work not only that week, but has had to be in

systematic training for this contest the entire summer.

To assign an efficiency standing to the battalions, competition takes place in the following branches, the prize again being a liberty as in the case of the athletic contests: Infantry, seamanship, rifle shooting, and swimming. The infantry consists of manual of arms, company and section movements both in open and close order. The actual marks are determined by competitive drill, which puts each member of a battalion on his mettle and gives the acting midshipmen officers experience such as they will not have again until they become first-class men. The seamanship points are determined by competition in (*a*) cutters under oars, (*b*) cutters under sail, and (*c*) signals, wigwag, semaphore, and flags. The rifle-shooting grading is given by assigning points for each qualification in the courses as expert riflemen, sharpshooters, or marksmen. The swimming is figured by crediting five points to qualified swimmers and one point to second-class swimmers.



White Studio

OFFICE OF OFFICERS OF THE DAY — OFFICE OF DUTY OFFICER

INTERIOR OF QUARTERS



These two competitions which include all the summer's work serve as a definite goal for which to strive, and provide the morale required to stimulate interest.

Wednesdays after three o'clock and all Saturday afternoons,—such periods being free of drills,—are devoted to baseball contests with such outside teams, as can be obtained for games. A series of inter-battalion games is usually contested as well. Light football practice begins the middle of July, this is followed by harder training the following month and, in the latter part of September, upon the return of certain upper classmen who have belonged to the Navy football squads, regular training and practice for this sport is inaugurated. Tennis is popular, the courts being plentiful and excellent. Through the means of these contests and sports the athletic officer is enabled to select the men of the new class for Navy athletics.

On Sundays there is compulsory attendance at church; choir and ushers are chosen from the midshipmen by means of try-outs.

The first break in the routine of these daily drills comes during the last week in August when the practice squadron returns from its summer cruise, the three grey battleships anchoring in the Roads some four miles distant from the Academy, the depth of water in the channel and the constricted size of anchorage room available forcing this inconvenient procedure. From the battleships the upper classmen hasten ashore, don their "cits," and depart on their thirty days' leave, and in a brief day the bustle and excitement caused by their arrival and departure are over.

Unfortunately a few are always left behind, quartered in Bancroft Hall. These comprise those found deficient at the annual examinations, who have re-examinations to take, on or about the 10th of September, and those who, on account of living far in the West, are not able for financial reasons to take leave, and who enjoy September in Annapolis, the many advantages of the Academy being at their call.

Beginning with the first of September the

routine for the plebes is modified by the substitution in the second period for the drills of study and recitations in French or Spanish. The class is divided, one half taking French, the other half taking Spanish. One language only is studied by each group and this study is continued the entire four years. The rifle range practice is omitted this month. Mechanical drawing occupies the third period, gymnasium work taking the fourth period.

Thus the busy "plebe" summer passes quickly away to October the 1st, when, all too soon, the academic year commences with its studies, examinations, and recitations.

CHAPTER IV

ORGANIZATION

"The true test of a man's courage is his power to bear responsibility."—EARL ST. VINCENT.

THE Naval Academy is governed by an officer of the Navy designated as the Superintendent. The educational part of its life is controlled by a body of officers known as the Academic Board that comprises the Superintendent, who has three votes in the deciding of questions before the Board, and the following officers of the active list of the Navy: the Commandant of Midshipmen, who is Head of the Executive Department, and the Heads of the Departments of Seamanship, Ordnance and Gunnery, Navigation, Marine Engineering and Naval Construction, Mathematics, Electrical Engineering and Physics,

English, Modern Languages, and Naval Hygiene and Physiology. Thus, including the Aid to the Superintendent, who acts as its Secretary, the Academic Board is composed of twelve officers.

To carry out the education both theoretical and practical of the midshipmen under the supervision of the foregoing Board, there are (1915–1916) attached to the Academic Staff of the Naval Academy, one secretary and the following assistants:

Department	*Line Officers*	*Staff Officers*	*Civilians*	*Officers not Instructors*
Executive	8	1	7	
Seamanship	5			1
Ordnance	5			2
Navigation	9			
Marine Eng.	17	1		2
Mathematics	3	2	6	
Electricity	12	2	1	1
English	4		9	
Languages	2	1	10	
Hygiene				
Total	65	7	33	6

In addition to the staff, there are required in order to carry on the work of the school, the two officers—a commander and a civil engineer—charged with the care and maintenance of buildings and grounds; three medical officers; two dental surgeons; four pay officers; one chaplain; a library force of three civilians; and the commanding officer of the station ship, the *Reina Mercedes*. The officers attached to the Naval Hospital (4), the Reserve Torpedo Division (1), the Engineering Experiment Station (3), the Post Graduate Department (the Head, six civilian instructors, and twenty-eight officers under instruction), and the Marine Barracks (2) form the remainder of the naval personnel present at the Naval Station at Annapolis, Maryland.

The Executive Department is directly concerned with all the matters that pertain to the daily life of the midshipmen with the exceptions of their class-room work and most of their practical education. It undertakes the task of moulding the individual character and conduct of the future officers, and main-



THE ACADEMIC BOARD, 1915–1916



taining the discipline of the entire regiment. The importance of this department, the officers of which are in daily intimate touch with the midshipmen, can be readily appreciated. Physical training, the infantry and artillery drills, fencing, all athletics, and the regulating of recreations come under its direction. The officers of the executive branch by their efforts and example develop in the midshipmen the qualities of responsibility, obedience, leadership, command, zeal, energy, thoroughness, and judgment. In other words, in their intercourse with midshipmen, they endeavour to represent the ideal naval officer of whom John Paul Jones writes under date of September 14, 1775:

"He should be the soul of tact, patience, justice, firmness, and charity. No meritorious act of a subordinate should escape his attention or be left to pass without its reward, if even the reward be only one word of approval. Conversely, he should not be blind to a single fault in any subordinate though, at the same time, he should be quick to distinguish error from malice, thoughtlessness from incompetency, and

well-meant shortcoming from heedless or stupid blunder. As he should be universal and impartial in his rewards and approval of merit, so should he be judicial and unbending in his punishment or reproof of misconduct."

When worn out in the trying work that is necessary, in their dealings with the large number of midshipmen, they are cheered by Nelson's maxim:

"Patience and perseverance can accomplish wonders."

This task is more intangible than is that of teaching engineering and the like, and hence is the more difficult.

The student body of midshipmen is organized in accordance with standard naval principles and customs, and is directly controlled by the Executive Department. The regiment of midshipmen is composed of four battalions of three companies each and is under the command of the *midshipman commander* (the "five striper"). This position is naturally the very summit of the midshipman's

ambition and immediately marks the fortunate man who fills it as exceptionally prominent both in studies and in practical everyday ability; in fact, he is usually the recognized leader in the all-around qualities that make a man. On the staff of the regimental commander are one *midshipman lieutenant and adjutant*, three *midshipmen junior lieutenants* for the duties of the commissary, ordnance, and signal officers, one *midshipman ensign*, as aid, and the *midshipman regimental staff petty officer*.

Each of the four battalions is commanded by a *midshipman lieutenant commander* ("four striper"), who has a staff composed of a *midshipman junior lieutenant and adjutant*, two *midshipmen ensigns*, one the commissary and one the ordnance officer, and one *midshipman staff petty officer*. Three companies, in the year 1915–1916, formed a battalion; though, with the increased number of midshipmen allowed by the act of 1916, it is expected that, in the academic year 1916–1917, a battalion will consist of four companies.

Each company is under the command of a *midshipman lieutenant*, or "three striper," who is assisted in his administrative and drill duties by a *midshipman junior lieutenant*, a *midshipman ensign*, and from ten to twelve *midshipmen petty officers*. All these officers are taken from the first class. The smallest unit for administrative purposes is thus the company, of which there are twelve. Each company comprises midshipmen of all the four classes distributed in numbers equal to the membership of their class divided by twelve, which means that, in 1915-1916, from fifteen to eighteen members of each class are in each company.

The positions of regimental, battalion, and company commanders are by no means empty honours and for show only; on the contrary, they carry much responsibility and the added burden of the extra work entailed by elevation to leadership. The discipline of the Academy is administered directly through them by the commissioned personnel of the executive department. Midshipmen officers are given a



H. M. MULLINIX

THE MIDSHIPMAN COMMANDER

1915–1916



commission as such signed by the Superintendent, who expects them to show themselves worthy of the trust accorded by maintaining the high standards of discipline and the most honourable traditions of a naval service that has never had an equal.

Under the supervision of the Duty Officer (a commissioned line officer of the executive department present for twenty-four hours at a time in Bancroft Hall), the routine of the midshipman's daily conduct of life is administered efficiently by the daily "duty squad," which is composed of midshipmen. Members of the regiment who are to compose this squad are notified of the fact at noon each day; and, at 7.30 that evening wearing belts and white gloves and carrying their regulation books, they form in the rotunda of Bancroft Hall answering: "All ready, sir," to their muster by the off-going officer of the day, and indicating thereby that the regulations regarding their duty are understood and have been read within the preceding twenty-four hours. The function of the belt and gloves is to indicate

clearly to their fellows that the wearer is on duty and must be obeyed in whatever orders he may give. The duty squad carries out its work for twenty-four consecutive hours.

The "plebe" has scarcely any duties the performance of which will require time from his study. He is purposely left alone to his own self-discipline in order that he may "find himself," while unhampered in the efforts that he must put forth to remain a member of the regiment. At the end of a year the routine and orderly method of living have been acquired, so that he logically can be required to perform duties that assist in carrying on the work and routine administration of the regiment.

The "youngster," or third classman as a second year midshipman is designated, is placed on duty, which is of two kinds, one that is designed to give him a comprehensive view of the workings of the organization without being strictly responsible for any large part of it, and the other giving him direct responsibility. The first duty, that of assistant

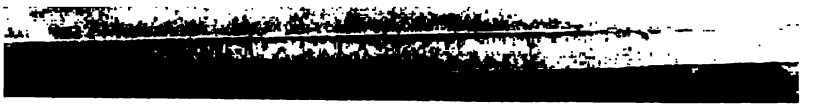
officer of the day, requires his presence in the main office of Bancroft Hall practically every minute of the day except between 11 P.M. and 6.30 A.M. Here he answers telephone calls, delivers orders and messages consigned to him by his seniors, checks up absentees from recitations and drills and accounts for them. This is a busier employment than might be supposed, and it is a tired midshipman that turns into his hard bed that night some half an hour after the regiment has so done, and has been accounted for by the midshipmen inspecting officers. The second duty assigned the youngster is that of midshipman in charge of mail, its sorting and distribution, work that requires responsible attention. Ability and responsibility in this detail are quickly apparent to the senior officers. So many things go wrong with the daily mail distribution of nine hundred midshipmen that the two youngsters to be successful must show some appreciation of their responsibilities as well as applying much common sense.

Another way in which leadership is developed and mention of which has not been previously made is common to all four classes. This is the placing of midshipmen in command of sections for recitations and of squads for drills, such details being for periods of a month at a time.

The second classman's duties consist of being assistant to the midshipmen in charge of the floors. These assistants under the first classmen of the floors are charged with the maintenance of quiet during study hours, the execution of orders, the passing of various words such as uniform for drill, the directing of a certain midshipman to report to the reception room or some other equally apparent trifle. Yet some perform this duty perfunctorily and consequently inefficiently and unsatisfactorily, while others put their best into it and obtain the true results that discipline demands.

That duty is always paramount to all else is taught by requiring these duties to be performed regardless of the call of an athletic







team or other claims. Reliefs for such reasons are not permitted.

The first classmen, aside from their duties as company, battalion, or regimental officers, come on duty in frequent rotation as officer of the day, and as midshipmen in charge of floors. The first class midshipmen in charge of floors are assisted by second classmen, and both are charged with the enforcement of the regulations and the reporting of infractions of the same. Rooms are inspected often to see that all is as it ought to be. These midshipmen must maintain quiet and prevent visiting during study hours. The officer of the day, designated by his belt and white gloves, comes in direct contact with the commissioned officer who is in charge of the discipline and routine of Bancroft Hall for the day, and who is able thus to judge of a midshipman's ability very quickly. The midshipmen officers of the day are called upon to assist in a courteous manner the parents and friends of midshipmen, strangers and visitors who constantly apply to them for information on one subject

or another. They superintend drill and section formations, accounting for the absentees therefrom. One officer of the day keeps the rough log or journal of the Academy for the day, this being copied into the smooth log by his relief and submitted to the Superintendent. This log contains the weather, the drills, the visits of public officials, the examinations, dismissals, resignations, suspensions, restoration to duty of midshipmen, athletics, and such incidents of importance. Writing the smooth log occupies the quiet evening hours, while at the same time the other officer of the day collects, prepares, and checks up the reports of infractions of the regulations during the preceding twenty-four hours and gives these reports to the midshipmen in charge of floors to be written up smoothly, a battalion on a sheet. These reports come in from many sources such as duty officers, drill officers, instructors, midshipmen on duty, etc. The evening study hour is pretty well consumed by this writing of the smooth conduct sheet from the delinquency sheets given

the midshipmen in charge of floors, by the officer of the day. These sheets are read at morning roll-call. Midshipmen reported are granted till the next day to submit statements regarding the offences with which they are charged and these statements are considered with the report before the punishment and the demerits are imposed for the offence.

The ability that midshipmen display in performing these duties varies remarkably in degree. Many *just cannot* do them at first, but they discover that in this, as in all things, practice and training help and, as time goes on, they note an improvement. Experience added to knowledge is the greatest teacher of the seaman the world over.

The midshipmen are carefully graded in respect to their proficiency as leaders, by their ability as displayed in the discharge of these various military duties, marks being assigned them by the duty officer, as well as by all other officers with whom they come in contact. These marks determine the efficiency multiple, one that affects their class standing in a

degree considered proportionate to the importance of the subject.

Thus it is seen how the organization provides for the teaching of responsibility by entrusting much of the maintenance of discipline to the midshipmen; and whether its standard is to be high or low depends much upon their *esprit de corps*, their viewpoint, their attitude towards the Service and towards the officers stationed at the Naval Academy. These qualities are controlled more directly by the Commandant of Midshipmen and the officers of his department than by any other one influence at the Academy. The task placed upon the Executive Department of imparting to the midshipmen the very best viewpoint and the highest ideals, while at the same time holding them to the observance of regulations rigidly and penalizing infractions of such regulations, is no simple one, but may well be considered as the most difficult and the most important work at the Academy.

"Discipline is obedience."—EARL ST. VINCENT.

CHAPTER V

ACADEMIC WORK

"*Scientia navalis ventorum marisque dominatrix.*"[1]

WITH the return from leave of the upper classmen on the thirtieth of September, a new routine of studies and recitations begins and continues for eight months that are mostly made up of steady book work, or "boning." There was a time in the Academy when the return of the upper classmen was looked upon with dread forebodings of the hazing and running certain to be the lot of the "plebe." At present there is nothing to be said on the subject of hazing because it does not exist, being conspicuous only because of its absence. Like the duello and lynching, haz-

[1] From a work on Seamanship published October 8, 1807.

ing has completely gone out of fashion, and it is not likely to return.

The academic life with its associations becomes dear to the midshipman despite the endless striving for standing. The feeling on graduation is a mixture of sadness at leaving one's classmates and an overwhelming joy at being released from the continuous juggernaut of a routine and discipline that has given the midshipman hardly space for a quiet breath. As one midshipman expressed it, he will then possess a moment when he does not have to bone for his life, for during the academic year—which apparently consisted of reciting, a return to quarters, a grabbing of a new set of books to study for the next recitation, a rush to that recitation, then a hurried return to devour still more books, and so on until taps—not one minute remained in which he could act for himself. The regularity of the life palled on him greatly and by the end of the fourth year this midshipman considered he had a good excuse for running stale.

Between reveille at 6.30 in the morning and morning roll-call at 6.50, there is little leeway for rubbing one's eyes or taking forty winks even though one be willing to risk being discovered in the act by the midshipman on duty. Bedclothes must be pulled back and bedding arranged to air within the first five minutes, four minutes is allowed from the call to morning roll-call until the last blast. Remarkable records are made by midshipmen in dressing. They can turn out in a second floor room at the bugle call, dress and answer their name at roll-call in season, that is in the four minutes. As the duty officer inspects the formation during the reading of the conduct report, many a midshipman who has failed to put on a collar or cuff, is discovered; on the other hand, many in the same state of disarray escape detection, due to the large number to be inspected by one officer in the very short space of time that is occupied by the reading of the sheet containing the record of the reports of midshipmen for violations of regu-

lations on the previous day. Breakfast in the big mess hall is the quietest meal of the very noisy three, probably because the spirits of the midshipmen are not yet sufficiently aroused from sleep, or because some apprehension as to the success in the day's recitations is felt. Prayers are said upon the conclusion of the meal by the chaplain, after which the midshipmen repair to their rooms in quick time in order to snatch a last look at the lessons of the morning; in some cases, it is sad but true, to steal a smoke at this convenient hour in the quarters or by the deep recessed doors of the gymnasium and armory; to complete their hasty toilet; and to sweep out their rooms, make their beds and tidy up their lockers, book shelves, and toilet articles.

Two midshipmen are assigned to one room, the roommates alternating in taking charge of its policing. The one in charge receives the demerits for any untidiness that may exist at any inspection, except that each is responsible for the make-up of his own bed.



White Studio

MIDSHIPMAN G. F. BUNNELL WEARING REEFER — T. J. KELIHER, JR. MIDSHIPMAN LIEUTENANT — G. F. HUSSEY, JR. MIDSHIPMAN LIEUT. COMMANDER

MIDSHIPMAN'S ROOM



White Studio

AT RECITATION



Such derelictions as a chair adrift, a window tightly closed, a dirty wash basin, shower bath curtain not properly draped, shoes not in place or dressed under bed, entail one demerit each.

The requirement that one be thus particular in small things is for purposes of discipline, and for the training of the midshipman's observation in order to develop it to that acute second nature sense so necessary to an officer on shipboard. The sailing ship training held in the by-gone days implanted this sense of order and alertness in one's mind unconsciously and made the officer quick to notice the slightest thing amiss; but, with the passing of the sailing ship has come no substitute save the inefficient one of requiring the smallest details to be observed, under pain of conduct demerits that, though deserved, often fail to come because the minute daily inspection required in order to observe these things calls for time on the part of officers that is not available.

The rooms in Bancroft Hall are of several

types. The "plebe" rooms, opening on the bare central courtyards, are built with a partition in the centre running to a vestibule, on one side of which is the shower bath and on the other the closet used in common by the two plebes. On each side of the partition is a single bed, a study table, chair, locker, and toilet stand and book shelf. This arrangement of the room is based on the supposition that it aids each new midshipman to acquire habits of study undisturbed. It is questionable whether it fulfils any useful purpose, the architect's real idea being that there would be three rooms always available for two midshipmen, one for study, and the others, like the one just described, to be the two bedrooms. The number of midshipmen has always been too great for the adoption of that plan. In the fall of 1916 three or more midshipmen will have to be assigned to each room. In consequence, this partition, which renders the room dark, fulfils no useful purpose.

The "youngsters" have larger rooms with

one table for the use of two midshipmen in common, two lockers and toilet stands (ugly articles), closet, and a shower to every two rooms. These rooms are generally outside, bright and pleasant, all with restful views, some of the harbour and bay, others of the river, others of the grounds.

The second class rooms are larger but on the same plan as are those of the youngsters; the first class occupies rooms on the corners with many windows, a closet and a shower being included. The living quarters are thus roomy and light, though always bare and cold in winter. No ornamentation is permitted to the end that there may be no visible distinction between the sons of rich or poor parents. Photographs may be exposed only in the locker and upon a designated shelf.

Recitations begin at eight o'clock. The day is divided into three periods, each comprising an hour of study and an hour of recitation, the midshipmen alternating by months as to the hours in which they study or recite.

Classes are divided, for the purpose of recitation, into sections. Much discussion as to whether these sections should be arranged alphabetically, by lot, or by class standing is always under way. There are many arguments for and against every method. All have been tried at the Naval Academy and all have given about the same general results. The principle in use at West Point whereby the brightest students can delve a little more deeply into subjects and pursue advanced studies is not permitted at Annapolis. At present (1916) the sections are arranged by lot, a rearrangement in every department taking place each term.

As the future career of a midshipman is dependent in no small measure, as is just, upon scholarship, it is essential that all be carefully marked and graded. To this end it is necessary that a mark be assigned as often as possible to each midshipman. This renders instruction by lectures less feasible than in the universities of the country. Constant drill at many things, notably the

use of logarithms, is so essential that it requires daily effort on the part of the student and the assigning of a mark by the instructor.

Marking, as was adopted by Commander Buchanan, is on the scale of 4, the daily marks being carried out to tenths, and the examination and term marks to hundredths. Students who attain an average for a year of more than 3.40 wear gold stars behind the gold anchors on their collars. This custom stimulates a greater zeal for and closer attention to study. The possession of a star on the collar distinguishes the wearer as a man of brains, application, and earnestness. Upon graduation an average for the whole course of over 3.40 means that the diploma reads "with distinction," an average between 3.00 and 3.40 obtains the notation "passed with credit," while from 2.50 to 3.00 reads simply "passed." To be satisfactory for a term or year requires a mark of at least 2.50. This average is secured by the great majority of midshipmen and thus appears not difficult

of attainment by a studious boy of moderate mental ability.

The academic year 1915–1916, which began on October 1, 1915, found 918 midshipmen in attendance. On April 18, 1916, there remained 797 midshipmen divided as follows: first class, 178; second class, 189; third class, 210; and fourth class, 220. Thus some 121 midshipmen had dropped out during the first six months of the year. The dropping of only eighty-two of this number can be attributed to failure to attain the scholastic requirement of 2.50. The remaining thirty-nine had severed their connection for other reasons, such as dismissal for bad conduct, physical disability, or voluntary resignations due to personal reasons.

The sections consist of between twelve and fifteen midshipmen, the large number being caused by the insufficiency in the numbers of officers and civilian instructors on duty. The usual method of reciting is to give each midshipman a subject which he writes or works up on the blackboard, or on a pad

at his chair, and the instructor then hears him orally read and explain what he has written and assigns a mark according to its value. The marks are entered each day in a little red-covered book. Of course the student naturally likes to ascertain his mark, so an occasional glance towards the book in an endeavour to note its contents may be attempted. One professor who happened to see a midshipman glancing into his mark book from a short distance, quickly said; "No use, Mr. Doe, your mark is too small to be seen from such a distance."

The first part of the hour is usually occupied with explanations by the instructor, and, when intelligent questions are asked, the time may be extended. As there are on an average not over three recitations a week for each subject, it can be readily understood that each midshipman should receive a mark every recitation period at which he is present, for the duty in Bancroft Hall requires the presence of ten first classmen daily, and, if the midshipman be indisposed

another day, or a lecture should occupy the third day, no mark is received for the week. Additional absences are caused by the physical examinations and other routine duties. Lessons are assigned that require concentration upon them during the study period available, and lucky is the man who early forms a correct habit of study. The fourth class year finds the greater number falling out because of failure in studies, this being due partly to the fact that the habits of study are as yet unformed, and partly to insufficient grounding in the subjects required for entrance.

The first period is from 8 to 10.04 A.M., the second from 10.14 A.M. to 12.14 P.M., and the third from 1.20 to 3.20 P.M. The change and air obtained in the march to and from recitations to the music of the midshipmen's bugle and drum corps is a welcome one. During the second period comes the inspection of rooms by the officers in charge of the battalions. The inspection is for neatness and is made quickly and thoroughly,



the locker doors being opened so as to unfold to view the ability of the midshipman in stowing his many articles in a space much too small for them.

The noon rest is but an hour, and part of that is taken up in the formation and march to the mess hall at 12.30 P.M., where luncheon is served. It is a misdemeanour to take books to the meals; so even if the midshipman feels he *just must* study, he cannot do so and will have to content himself with verbal inquiries of his messmates unless he is willing to risk the demerits that will surely follow the detection of a book at mess.

The first two years are occupied chiefly with the obtaining and the standardizing of the necessary general education required; the plebe who has already covered the scope of his first year and used the text-books of the course is fortunate, and such a one will find life much easier. This general education is very necessary and that an officer should be able to use good English has been best expressed by John Paul Jones, the fourth

classman being required to paste in the front of his English note-book this sentence of his:

"None other than a gentleman, as well as a seaman both in theory and practice, is qualified to support the character of a commissioned officer in the Navy; nor is any man fit to command a ship of war who is not also capable of communicating his ideas on paper in language that becomes his rank." (John Paul Jones, letter to the Marine Board, 1777.)

The English Department further models its course with a view to forming military character by developing the personality and individuality of the midshipman distinctly along the lines of what is known as the *humanities* that can be taught by the studies of history and literature. The books read are chosen for the effect they will have upon the mind and character; as a result such books as biographies of Nelson and Farragut, Carlyle's *Heroes and Hero Worship* are found in use at the Academy.

Summaries of the four years' work are



SAMPSON HALL MAHAN HALL MAURY HALL *White Studio*

VERA CRUZ MONUMENT HOSPITAL



given in Appendix I, as a guide to the preparation desired in the years prior to entrance and as an indication of the amount and variety of work that must be done in order to pass each year and finally to graduate.

After the third recitation and study period comes one of drill, after which from 5 to 6.30 P.M. there is a time of freedom for the midshipman when he can, and usually does, devote himself to athletics, the choir, the preparation of the Academy paper, the matters in connection with graduation and academic dances, the class book, and the various other activities connected with the Academy. The non-swimmers and imperfectly developed men are required to use some of these periods for instruction and physical exercise.

Dinner comes at 6.30 P.M., it being the noisiest as well as the heaviest meal of the day, for no one is dreading a recitation with an ill-prepared lesson and the whole evening is available for study.

At 7.30 P.M. the study call is sounded by the bugler, whereupon all must repair promptly to their rooms, keep quiet and bone until at 9.30 with the evening gun fire comes the release from rooms. From then until 9.55 P.M., tattoo, the midshipmen may use the time for skylarking, seeing their classmates, reading the papers and magazines, or getting help from men more "savey" (bright) than they.

The total number of hours per week occupied by recitations are sixteen, those available for study are twenty-eight, and those used in practical instruction and drills are six and one-sixth hours. While, on account of the clerical work involved, midshipmen do not see their daily marks, they are notified if their work is not satisfactorily done by the posting on the bulletin boards on each Saturday morning, of the names of all who have been deficient during the week together with the mark for the week they have been awarded. This list is known as the "tree."

A midshipman may not turn in until 9

P.M., no matter how sleepy he may be. Should he do so and his room happen to be visited by the midshipman in charge of the floor or the duty officer, a report regarding his conduct will result, and five demerits will be assigned him. When tattoo is sounded each makes a rush for his own room, and by the end of the bugle call of taps all are turned in, save only a few who are behind in their studies and who have been granted authority to study one half-hour longer. Upon turning in, lights are left burning in the rooms. These are turned off by the inspecting midshipman officer after he has satisfied himself as to the presence of the midshipmen.

Class standing is affected in some measure by conduct. This is as it should be, for experience always proves that the one who lives right and obeys the law is the one to whom in after years a captain of a battleship on the high sea will be able to entrust with confidence the deck on a dark winter night in heavy seas or thick fogs, and that he is

also the one who will have a good turret and division on that same battleship. Loyalty to your country and your seniors is the whole thing, to express it but mildly, in any unit of organization from a squad to a fleet, and this necessary attribute of character is first indicated by the midshipman's willingness to obey the rules of civilization and right living that have been laid down in the regulations of the Naval Academy.

The men who *do* behave properly naturally are entitled to something more than the intentional wrongdoers, the careless, or the shiftless. Conduct grades are therefore established each month. For the several conduct grades the following number of demerits must not be exceeded any month:

	First Grade	*Second Grade*
Second class	8	13
Third class	10	16
Fourth class	12	20

The third conduct grade comprises those having more demerits than are allowed for

the second grade. The first classmen are not placed on conduct grades or made subject to any ordinary restrictions as to privileges due to demerits. It is only when, because of serious and extraordinary offences, they are quartered and messed on the U. S. S. *Reina Mercedes*, which vessel has taken the place of the old *Santee*, that they suffer any deprivation due to misconduct.

The craving for tobacco is responsible for many demerits, its use being forbidden to all save midshipmen of the first class. Restriction to the *Reina Mercedes* is a usual consequence of the use of tobacco, and this change of quarters, from Bancroft Hall to the berth deck of this former Spanish cruiser of Santiago memory, lasts from two weeks for a first offence to three months for the third offence. Further offences result in a recommendation for dismissal as an incorrigible. Any midshipman who cannot discipline himself in this small matter naturally cannot, with reason, be expected to amount to much in the service later on, and the country is

amply justified in not wasting any more money and the time of instructors upon his further education. One who cannot obey cannot lead.

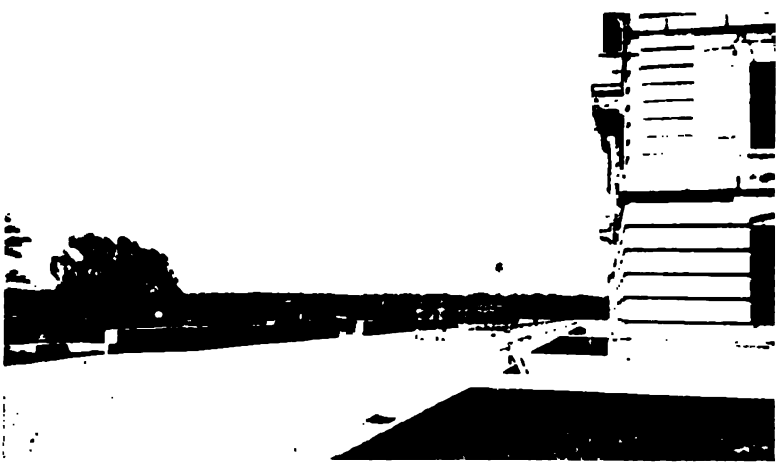
Demerits over twelve for the month in the case of the fourth classmen, entail extra duty on Saturday afternoons during the following month. A group of khaki-clad plebes carrying rifles and gloomily pacing the terrace of Bancroft Hall is thus a familiar sight every Saturday afternoon. This extra duty lasts but an hour, yet spoils part of the baseball, football, or other athletic contests for the offenders. The desire to be exempted from this useless occupation and to escape deprivation of part of the one short holiday the week affords is an incentive towards avoiding demerits.

The liberty privileges vary with the years until finally the first classman is practically as free to come and go within the city limits as is any officer stationed at the Naval Academy.

Demerits are assigned as a record of mis-



MESS FORMATION



THE EXTRA DUTY SQUAD



conduct. The number received by a midshipman, together with the seriousness of the offence committed, is a real indication of his character, his trustworthiness, his attention to duty, and is thus, in the final analysis, a true measure of his fitness for the Naval Service. The longer a midshipman has been at the Naval Academy, the less excuse there is for him to get demerits. A few offences follow as an indication of the assignment of demerits:—absence from morning roll-call, ten demerits; absence from academic limits, fifty demerits; articles adrift, three demerits; playing cards or games of chance, net twenty-five demerits; ordinary neglect of duty, ten; receiving money or supplies without permission, fifteen; profanity, fifty; inattention to recitation or drill, five; irreverent conduct at divine service, fifty; not properly shaved, three; disorderly conduct, ten to five; out of uniform, three; whistling during study hours, five; whistling in Bancroft Hall not during study hours, one. On board ship the boatswain's shrill pipe or

whistle is the signal that calls attention to an order or word about to be passed; hence a sailor desires that the whistle be reserved for this purpose alone. Therefore the midshipmen are forbidden to whistle and are ordered to secure the tune to the main bitts with a hitch other than a slippery hitch.

Deficiency in conduct is considered to have been shown when a midshipman shall have received for the half-year two-thirds of, or for the whole year the following number of demerits:

First class	150
Second class	200
Third class	250
Fourth class	300

A continuous record of demerits is kept the whole year, and at the end there is deducted from the final multiple attained by a midshipman for a year a certain amount for each demerit received, which amount is:

First class	.1
Second class	.05
Third class	.02
Fourth class	.005

No demerits received by the fourth class prior to October 1st, are counted, in order to grant the members of that class the entire summer in which to accustom themselves to the discipline, the new mode of living, and to "shake down," or find themselves as a part of the future Navy of the United States.

A glance at the merit roll of some first classmen shows that from a multiple of 320, the greatest amount taken off for misconduct was 14.20, the least was 0.10, the average approximately 3.00, and that those with subtractions greater than 15 usually failed of a commission. It also shows that failures in conduct are the portion of the least worthy members, a result which is to be expected, and a proof that proper living is as essential to the Naval Academy as to other walks of life.

The midshipman must thus both by his work in studies and work in his discipline prove to the authorities that he is worthy of his uniform and of the generous treatment accorded him by the government.

"Every man gets his chance," is an old saying, but one that is peculiarly true to every member of the regiment of midshipmen.

"So here is the rule—I command it:
Nor Teuton nor Saxon be ye,
But all who abide in this household
The sons of this Fatherland be.
For, here is but one lord and master,
One country, one flag, and one name,
And they shall be alien and hated
Who fail of its weal or its fame."

OUSLEY.

CHAPTER VI

EXAMINATIONS

"*Engage the enemy more closely.*"—Nelson's signal at Trafalgar.

THE procedure ordered by this signal of England's favourite naval hero is put into practice by the midshipmen when dealing with their great enemy, the examinations. For the midshipman and for the officer or instructor as well, the examinations come all too frequently, but in the case of the former they help mark the flight of time and render the day of graduation appreciably nearer.

The academic year is divided into two terms, each consisting of four months, the first three of which are devoted to advance work. Examinations take place in every

subject at the end of each month of advance work, and also at the end of the fourth or review month of each term, this time in the shape of the semi-annual and annual examinations. Portions of the examinations in French and Spanish are conducted orally, but all the other examinations are written. The time allowed for the monthly examinations is one hour and fifty minutes, while that for the semi-annual and annual is four hours and forty minutes divided into two periods, each of two hours and twenty minutes, a welcome recess of twenty minutes being allowed between periods. A fourth classman has four subjects to study, the third classman has five, the second classman has five, and the first classman six, and each class has the corresponding number of monthly and half-yearly examinations.

A review for an examination in one subject while progress is still being maintained in the other three to five subjects is a difficult task, but one that is performed well nearly always, judging by results. In order that

the tests shall be fair both as to time and as to subject matter, they are worked by instructors, on time and in the same manner as they would be by midshipmen, and are then altered until they are of the correct length and composed of proper questions, that is, questions that should be easily answered by midshipmen who have paid attention to and understood the subjects as they went over them the first time.

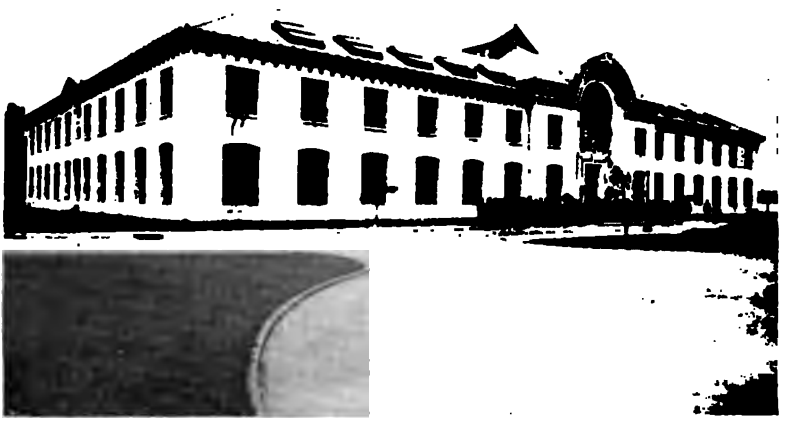
Facing the entrance to Bancroft Hall is a wooden bust of an Indian mounted on a brick pedestal. This bust was once the figurehead of the ship of the line *Delaware*, having been placed upon that vessel in 1821. The bust represents Tamanend, the celebrated ancient chief of the Delaware Indians, who died before the white men ever came to this country, and who was regarded by the Indians as one who never had an equal. The midshipmen, however, universally call this bust "Tecumseh, the god of 2.5." This is one of the few reminders of early academic days that still remain in view.

As 2.5 is the lowest satisfactory mark it is a not uncommon sight to see a class, as it marches down "Devil's Highway" (the proper name being Stribling Walk) to "Satan's Palace" (as the Academic Building is known) on the way to examinations, salute this wooden bust gravely when passing in order to invoke its aid in obtaining good marks in the examination.

Upon reaching the place of the test the midshipman will take out his watch, unbutton his collar and blouse, settle himself comfortably, then pick up the paper of questions and read it over in order that he may see at once what he can and what he cannot do, feel joyful or sad as the case may be, and tackle first the questions he understands the best. An instructor is present in the room to answer questions, and make the meaning clear in the places where doubt arises. Although placed close together and under no watchful eye, seldom or never does there occur a case of gouging or cheating. The midshipman body will not tolerate such



AT EXAMINATIONS



ISHERWOOD HALL

THE HOME OF THE DEPARTMENT OF MARINE ENGINEERING AND NAVAL CONSTRUCTION, AND THE POST-GRADUATE DEPARTMENT. SECTIONS LEAVING RECITATION FORMING FOR THE RETURN MARCH TO BANCROFT HALL



practice, and as a result, it is not indulged in, notwithstanding the great temptation in many cases so to do and the ease with which it might be done. Every midshipman who has recited during a month in any subject must take the examination in that branch; none are exempt because of high standing. The examinations give an indication of the extent to which the midshipman has absorbed the subject, as well as of the efficiency of the instruction given. This method has stood the test of time, and all other methods tried have failed to bring as good results.

At the completion of the second month in each term a list is posted of the midshipmen who, for the two months, have attained in any subject, a final mark of less than 2.50, with the subject and the mark attained. The list posted at the beginning of December has received the name of the "Christmas tree"; that posted early in April is known as the "May pole."

Studies are of two kinds—those continuous for a year and those completed each term.

A midshipman failing at the end of the first term to obtain a 2.5 in a continuous subject may be permitted to pursue that subject and eventually make up the deficiency. Such a failure in a completed study necessitates another examination in which he must obtain 2.50 if he is to retain his status in his class.

The month and term marks have much greater weight than have the examinations in determining the final merit for the month or term. The present system as regards the weights assigned examinations relatively to recitation room work and in requiring all to take the tests is the oldest, the most often tried, and has proven the best. Many attempts to modify the system have been made, but on trial all have proven failures, a return being necessitated to the present one, which appears the fairest toward all and gives the proper emphasis to recitation and examination work. Many midshipmen make a poor showing at recitations, due largely to diffidence, but succeed in telling on paper what they have absorbed of the work. The

examination appears to strike about the right average and to keep those men at the top who deserve to be there. The method of reaching a mark for a month is to multiply the average of the recitations by two, add to this the mark made on the examination, and divide the sum by three; the result is the midshipman's mark for the month. To determine the final for a term, the mean of the monthly marks is multiplied by three and to this is added the examination mark, the sum being divided by four, the quotient being the midshipman's final for the term. To the term mark is applied a coefficient, the product giving the multiple for that subject, and the sum of the multiples gives the figure by which the midshipman's standing for the year is determined. This system of coefficients was adopted in February, 1846, four months after the Naval Academy was founded, and its survival to the present date speaks well for the sagacity of Commander Buchanan, its originator. Conduct enters into the multiple by the deduction

of a figure as explained in the preceding chapter. Out of this final possible maxima of eight hundred the midshipman who graduated at the head of his class in June, 1915, had attained a figure of 711.90, and the first eighty-one in the same class secured over six hundred. That class represented an average result.

The cases of all midshipmen who fail to attain the final 2.50 for a term are considered and gone over in detail by the Academic Board at its frequent meetings held in the administration building. Every circumstance that might have operated to the midshipman's disadvantage, such as absence due to sickness or injury, together with the nature of the illness or hurt, is ascertained and carefully weighed before a decision is made. A careless and shiftless midshipman will not be deemed as worthy of leniency as one who has tried hard, and who thus shows he possesses one of the essential characteristics of an officer. Slightly unsatisfactory averages at the semi-annual examination, in but one or two subjects when those sub-

TABLE OF COEFFICIENTS, 1915–16

Departments		Fourth class		Third class		Second class		First class		Sum	Total
Executive	Efficiency	0		1		5		8		14	80
	Practice Cruise	0		1		2		3		6	
		First term	*Second term*	*First term*	*Second term*	*First term*	*Second term*	*First term*	*Second term*		
Seamanship		...	...	...	...	...	...	6	9	15	60
Ordnance		...	...	...	...	...	3	8	7	18	72
Navigation		...	...	...	...	...	9	6	7	22	88
Marine Engineering and Naval Construction		2	2	3	4	6	8	4	6	35	140
Mathematics		3	4	5	6	8	...	...	...	26	104
Electrical Engineering and Physics		...	...	5	4	5	6	6	6	32	128
English		2	3	2	3	3	...	...	...	13	52
Languages		2	2	3	3	3	2	2	1	18	72
Hygiene		...	...	...	...	...	...	1	...	1	4
		20		40		60		80		200	800



jects are continuous, will usually not result in a discontinuance of the delinquent's connection with the course, the hope being that the deficiency will be made up by the work of the remaining months of the year. A failure at the semi-annual in completed studies necessitates a semi-annual re-examination in the second week in May. A failure in the annuals requires a re-examination in the second week of September, if the midshipman who has failed is so fortunate as to be adjudged worthy of another trial to determine whether or not he will be continued with his class. Some who fail are turned back into the next lower class, providing always that even when so reduced they will upon graduation be not more than twenty-four years of age. Thus there is no way for the midshipman to avoid examinations; they must be squarely met. An absence in the hospital only means a short postponement of the ordeal.

In order that the academic routine may be more easily understood a typical calendar follows:

ACADEMIC CALENDAR, 1915–1916

1915		
October 1	Beginning of first term	Friday
1916		
Jan. 24–29	Semi-annual examinations	Monday–Saturday
Jan. 29	End of first term	Saturday
Jan. 31	Beginning of second term	Monday
Feb. 15	Examination of candidates	Tuesday
Apr. 18	Examination of candidates	Tuesday
May 22–27	Annual examinations	Monday–Saturday
May 31	End of academic year, 1915–1916	Wednesday
May 29–June 3	Graduation week	Monday–Saturday
June 5	Beginning of summer term	Monday
Sept. 30	End of summer term	Saturday
Oct. 1	Beginning of academic year, 1916–1917	Sunday



One widely spread bit of misleading information was printed recently by many of the best newspapers of the country to the effect that a midshipman had been dropped because of failure in but one subject, mechanical drawing. That designation of this study is misleading because it does not mean drawing alone, but the important mathematical subject of descriptive geometry as well; the midshipmen must pass in this branch. Even without the mathematics, the mechanical drawing is very necessary to the officers in after years and too much insistence is not placed upon it at the Academy.

Examination papers are marked carefully by the instructors; if a mark below a 2.50 should result, the paper receiving such a mark is read by another officer, and the mark he gives must not differ over .2 from that assigned by the officer who first marked the paper. A greater difference requires a third reading, by the Head of the Department, and a reconciling of the disagreement. If there were sufficient officers on duty, *all* papers

probably would be read twice, as was done in former years when the number of midshipmen was much less than at present. The result of this careful system is the safeguarding of the midshipman's interest in every way.

The standard required is not hard to obtain, and the failure to pass is generally the fault of something that it is in the power of the midshipman to avoid. He is helped along in spite of himself. When he fails to attain the moderate 2.5 out of the possible 4.0 it is time for him to drop out and let another boy have his try. The Navy needs the best boys in the country, and should have them. There are plenty who, if allowed the opportunity to replace the ones who fall out, can and will make more nearly the 3.0. The 2.5 officer type, that is, one who does not put forth his best efforts at the Academy, is not needed in the Navy, for he is likely to continue to give the service only a *little* of his power, never his maximum effort. Rather than make officers of boys

who will not work to attain a high percentage, the Navy can better take hard workers such as the hardy Gloucester fishermen and educate them. The Navy needs officers but it has no use for idlers, and the boy who cannot, or will not, try to pass the moderate mental requirements of the Academy can well be spared from the Navy's personnel. It is the endeavour of the course at the Academy *not* to teach a naval officer *all* he should know, for that is manifestly impossible of accomplishment in the four years, but the groundwork is given and the midshipman has learned how to concentrate, what to study, and how to express his thoughts in speech and writing. As Doctor Johnson expressed it:

"Knowledge is of two kinds: we know a subject ourselves, or we know where we can find information upon it." The wide range of subjects covered by the midshipman in such short spaces of time equip him quite largely with knowledge of this second type. In later years he is then able to become an

expert in whatever branch of his profession he may be doing duty. Examinations help the midshipman to become self-reliant, to think for himself, and to aspire only to a place he can earn by conscientious work of his own. It is no doubt true that much memory work is required of a midshipman, but it is not possible to have it otherwise when the time permitted and the ground that must be covered during the midshipman's life at the Academy are considered.

CHAPTER VII

PRACTICAL INSTRUCTION AND DRILLS

"The tools to him that can handle them."
CARLYLE.

IN order to understand how *to care for* and *to operate* mechanisms it is necessary that they should be disassembled and examined. This process cannot, for obvious reasons, be taught on shipboard, and hence the real practical instruction in machinery must come at the Academy. Much of such instruction, especially in the purely professional branches, is imparted by means of drills which supplement the purely academic recitations. It is becoming more evident as time goes on that an increasing amount of this sort of instruction is necessary, with the result that recitation time is now gradually being en-

croached upon more and more to make up for the lack of drill periods. This is especially true in the departments of Marine Engineering and Naval Construction, of Electrical Engineering and Physics, and of Ordnance and Gunnery. Sections in their recitation periods are diverted and given practical instruction at the models and machinery.

The English Department similarly found it advisable to extend its course, the inclusion of after-dinner speaking being deemed a desirable accomplishment. In the effort to teach this art once a week a special dinner is served in the recreation hall of Bancroft Hall, the first-class smoking-room, for the first-class men, one company at a time, and each midshipman at its conclusion is required to rise and make a short speech. Thus the course in English is continued into the last year, by encroaching upon the already scant time for recreation. This feature does a great deal of good and the midshipman accepts the instruction in the spirit in which it is given.

Half the recitation periods allotted to certain branches of the subject of Marine Engineering are utilized in practical instruction with the models and appliances of its well-equipped plant. Engines, boilers, pumps, ice machines, measurements of power, tests, explosion engines, oil engines, ship-building models are available and utilized. In Ordnance and Gunnery each midshipman actually measures the velocity of a pistol bullet, operates a range finder, a torpedo director, and is made to understand a turret mount, firing circuits, and the intricate machinery of the service torpedoes and launching tubes and mines. All these are fully explained to the midshipmen and they actually handle all these instruments during the recitation periods. It is true this method of instruction borders upon the lecture system, also that actual lectures do come quite often, despite the necessity for marks, previously pointed out, in order to grade the midshipmen.

The recitation periods last until 3.20 P.M.,



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FIVE-INCH LOADING DRILL



White Studio

FIRE CONTROL DRILL



after which hour there is another period of instruction known as the drill period; a misnomer because it is associated, in the minds of the majority, with nothing but artillery or infantry manœuvres, whereas it consists of essentially practical instruction. The midshipman must at the end of his last recitation hour shift into the proper uniform for whatever drill he is to attend. On Mondays, Tuesdays, Thursdays, and Fridays the time of the drill period is from 3.40 to 4.50 P.M.; on Saturdays from 10.20 A.M., to 12.10 P.M. There is very little infantry and artillery drill held because of the great variety of work a seaman is called upon to do at the present time. All drills are held with a distinct object in view; there is no need of killing time because there is none available to be wasted in such a fashion. Owing to weather conditions the drills are divided into the outdoor drills that take place in October, November, April, and May, and the indoor drills of the months of December, January, February, and March.

Visiting educators have without exception pronounced the electrical laboratory of the Naval Academy to be without an equal in any one institution of learning in this country. In view of this fact a rather detailed outline of the practical instruction in that department will be given even at the great risk of making some decidedly dull reading. The course of experiments is progressive and is laid out so as to illustrate the principles covered in recitations.

Each experiment is described on a card or in a pamphlet given to the midshipmen. The apparatus to be used, the object of the experiment, and the method to be followed are clearly stated. For example, in electrostatics are taken up:—How electricity is produced, the kinds of electricity and their action; by the use of static machines electricity is produced and its action shown; next come conductors and their use, including lightning conductors, experiments with voltaic cells, then the magnetic properties of currents, followed by measurements of re-

sistance, Wheatstone bridge, slide wire bridge, all of which are taught in corresponding detail. A study of types of windings of generators and motors from diagrams, and by winding dummy armatures is now given. The efficiencies of generators and motors are determined by measurements and calculations, as are various losses that reduce the efficiencies, such as the mechanical losses, stray loss, copper loss. The midshipman will next determine regulation, the characteristics of different types of machines, and show the types of motors and generators that produce the best results under given conditions of load and speed regulation; determine the best type of motors to use with constant speed, variable speed, constant load, variable load, other conditions of load; the different types of control and safety apparatus and the uses to which they are adapted; the methods of distribution; the method of obtaining a neutral for a three-wire direct current system by means of slip rings and a reactance with the distribution of three-wire to com-

bined motor and lamp load, which method is being used upon the later battleships; the method by which fractures and short circuits in an armature or a field winding may be located; the measurement of the copper resistance of generator windings and how to determine the soundness of the insulation by resistance measurements; connecting and putting in condition to deliver power a motor generator set, telephone calling and talking service, measurements of the temperature rise of the various parts of a direct current motor or a generator by resistance measurements and by thermometer. All these are taken up in practical detail.

Instruction in radio includes the actual setting up of and operating radio sets. During the study of the subject the various appliances are shown the midshipmen. In the fleet there is need of radio officers always and thus a great deal of attention is focussed upon the subject. In order to make operators of the midshipmen, a radio message is sent by a telegraph key that works a buzzer

in each section room of every class and at every recitation, and all midshipmen are required to read and take down the message. The press news is intercepted and taken each night in the radio station by four first classmen who come for this duty voluntarily. Then at 9.30 P.M., these midshipmen send out this press news by blinker, that is, flash signals of an electric lantern, which signal can be read by any midshipman who may so desire.

There are also assigned to this Department a part of the winter drill periods, covering the interval from December to March when the drills must be held indoors. During these periods the work is concerned rather more with the practical applications of electricity than with the working out of experiments to illustrate the theory of the apparatus. Thus faults are introduced into various systems, and the midshipmen are required to test for, locate, and correct them. Grounds, short circuits, and blown fuses are introduced into the various lighting, power, and tele-

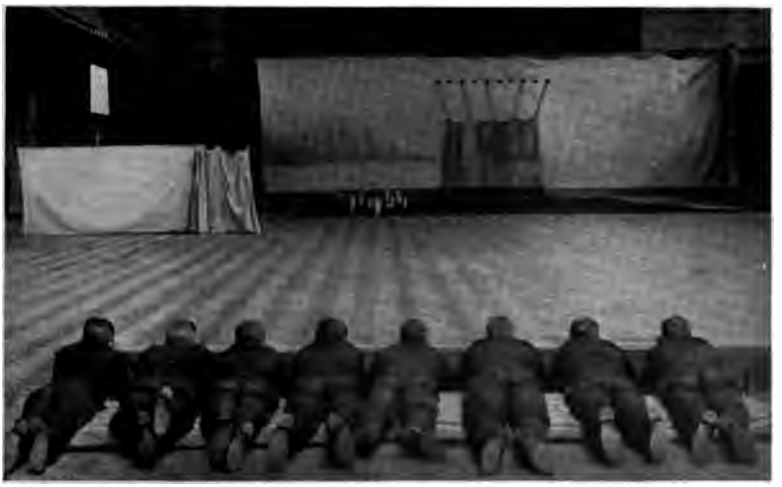
phone circuits; short circuits in a motive armature, broken connections in a field winding;—in short all the defects that are likely to confront the practical electrician. Their discovery and correction by use of the proper instruments and methods are then left to the midshipmen. The practical operation of generators and motors, starting, stopping, and connecting them in various ways to produce required results are made part of the drills. Also the difficulties that are likely to occur in their practical operation are introduced and must be overcome.

These are intended to bring home the right and the wrong way of doing things as well as to teach a quick recognition of what is the trouble and the cause of it. If a generator refuses to generate, a circuit breaker flies open, a fuse blows, or a motor stops, a telephone goes dead, the midshipman must find the defect and correct it. Some startling incidents occasionally occur while midshipmen are thus working, but safety devices are used everywhere, and no damage results,



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TORPEDO INSTRUCTION



White Studio

SPOTTING DRILL



while the incident serves to impress upon the experimenters a method to be avoided.

A part of the time devoted to practical work and drills is used for radio work. The theory is illustrated by experiments involving the use of various parts of the sets, apparatus, and connections; the drills require the practical connecting up, tuning, sending, and receiving messages.

The marine engineer must now master *seven* distinctly different types of propelling machinery, which are: Reciprocating steam engines, Parsons direct drive turbine, Curtis direct drive turbine, electric propulsion, turbines with mechanical reduction gear, Diesel engines, gasoline engines. The midshipman must know all these as well as a little about producer gas plants, hydraulic reduction gear and possible combinations of all types. Much of this instruction is given during drills and much by practical recitations during the recitation period as in the case of the electrical instruction.

The drills consist of practical instruction

in the use of tools, the operation of machines, and the application of mechanical processes generally. This instruction, supplementing as it does the academic course, continues throughout the four winter months of each year and is comprehensive enough to give each midshipman practical knowledge of repair and construction work. Not only is he taught to handle machinery but also to keep it in serviceable condition. A battleship is an intricate assemblage of mechanical appliances requiring most intelligent care and upon each unit the ship depends in order to maintain at its maximum her military efficiency. The naval officer is charged with the upkeep of this powerful and extensive plant and is held responsible for its successful operation. How powerful a plant this is can be imagined when one realizes that the indicated horse power of our proposed new battle cruisers must approximate one hundred and seventy-five thousand. The naval officer is repeatedly confronted with problems peculiar to naval practice and the requirements

that the engineer and machinist elsewhere cannot solve; emergency repairs constantly arise which he is called upon to direct; castings must be made, parts must be manufactured, *and these with the limited facilities at hand.*

Upon his entrance in the summer, the new fourth classman is given elementary instruction in tools and machines. He begins to know a pump, a boiler, and an engine, and before the summer is over, he can run a launch engine. He is shown also how to hold his drawing instruments and to use them so that upon the beginning of the academic year he is ready to take up the drawing of machine parts.

The following year as a third classman he works at the test bench and learns the value of filing and scraping. In the pattern shop he makes the patterns which he afterwards casts in the foundry. In the forge shop he is instructed in iron working, and in the laboratories he observes engines and auxiliaries operating under service conditions.

During the second-class year he is at the lathes in the machine shop, and works with the coppersmith and boilermaker, brazing joints, expanding tubes, repairing and fitting up boilers. He takes up this year also the study of gas and oil engines, which are everywhere replacing steam engines in power boats.

The work in his first-class year is applied to the use of large power tools; tests of internal combustion, reciprocating and turbine engines; analysis of flue gases; water tests, effects of corrosion, calibration of shafts; and the study of the details of ship construction from models.

Every effort is advanced to make this engineering course progressive in character. So extensively is the field covered that every moment is occupied in a way to produce maximum efficiency based on the experience of years. For many years in order to thoroughly master the machine shopwork, the second class spent the summer at Annapolis instead of on the practice cruise. In the summer of 1894 this schedule was interrupted

by the sending to sea in the *Bancroft*, of the second classmen in July, and since then the summer of machine work has never been restored. The inadequacy, due to lack of time, of the present instruction is being felt by the graduate, and postgraduates are now to be given a thorough course in the handling of all shop tools and machinery. Each professional department is thus utilizing to the utmost the splendid plant of the Academy, and giving the midshipmen a wonderful insight into the mysteries of modern machinery. There is so much to be learnt in the four years that it is not strange that some two or more years will be required after graduation before the real ability in the use of this information is developed. During the four years there are but 442 recitations in Marine Engineering, 340 in Electrical Engineering, and 153 in Ordnance work, all being supplemented by the practical work on shipboard during the three summer cruises that the midshipmen take unless sickness or other causes prevent their so doing.

The Seamanship Department drill begins with the first summer and continues throughout the four years. The plebe has much cutter drill, both pulling and sailing, the Severn forming a drill zone that is seldom too rough to be used; and when the indoor season arrives he is occupied with instruction in knotting and splicing, in signalling with the semaphore and flags, the nomenclature of boats, the compass, the log, and all types of lead lines and other sounding apparatus. Similar drill work is carried on through the third-class year in a more advanced way, with the addition of wire splicing and sailmaking. The second classmen take out the ship steam launches, of which there is a fleet at the Academy, steamers as they are now called, acting as engineers and signalmen, also in the pulling cutters as signalmen, and as assistants and understudies to the coxswains. The midshipman of the second class also learns the handling of small boats under sail in the many knockabouts, catboats, and cutters that are available. His work



STEAM TACTICS



"ARGO" UNDER SAIL. CUTTERS UNDER OARS





in the indoor drill season becomes that of learning signals, the use of the appliances on ship's bridge, how to write up and keep the log, the general navy nomenclature, and the details of the logs and leads. In his drill under this department, the first classman, as he is so soon to become an officer, is given the officer's part to perform as much as possible. In the steamers, he is the coxswain, and in charge, handles the signal book and works his steamer in fleet manœuvres to signals. In the cutters and half-raters he is in charge, handling both oars and sails. Two torpedo boats and the tug *Standish* are attached to the Academy for drill purposes and the first classmen observe and practise how to come alongside and leave docks, to pick up moorings, to put in use the rules of the road, to steer, to give proper orders to rudder and engines. Then the *Robert Center* and the *Argo*, a sailing cutter and yawl respectively, give them opportunity for gaining experience in handling larger sailing vessels. A sad moment for first and second classmen

alike it is when, picking up their moorings in a steamer, the engines stop, get on centre, and the boat does the inevitable, rams the dock hard enough to throw all hands down, causes damage to the boat, and a fall in the midshipman's efficiency mark. The drill in knockabouts and catboats is materially lengthened at times by lubberly work in picking up moorings under sail. No helping hand is extended to one in trouble, the midshipman must get there by himself.

The "plebe" finds that he must learn among the many new things the art of dancing, to the teaching of which there are devoted sixteen drill periods in the winter months, these being supplemented by extra lessons during recreation hours should he desire to avail himself of them. The drills are held in the Trophy Hall, the plebes of three companies attending at the same time. Gymnasium work, seamanship, and infantry drills are assigned the same number of periods during this winter period. The plebe thus does not have quite the variety in drills

that falls to his portion subsequently. The fourth classmen have more infantry and artillery drills than do the other classes during the winter months, in order that they may become used to military discipline and their bearing be improved.

Infantry and artillery drills are still required in the training of midshipmen as the battalions of seamen first land and occupy towns or fortresses, holding them until, relieved by the arrival of the marines, they are enabled to re-embark on their ships. Such drills are under the charge of the Executive Department and comprise packing the knapsack for landing force, outpost, advance and rear guard work, guard mount, etc., in addition to the regulation infantry and artillery tactics. But twenty-eight periods the entire year are allotted for such drills. Dress parades take place only during the week of the annual examinations and of graduation.

The regiment as a whole also parades as infantry at special functions, such as the inauguration of the President of the United

States, and the unveiling of monuments such as the one to John Paul Jones.

In the spring days the midshipmen of the first class are seen at different points in the yard using the theodolite and plane table and measuring base lines, as an application of the surveying instruction that has been given during the class-room work. Others are "shooting the sun," using the artificial horizon in order to determine true azimuths, latitude, and chronometer corrections. Inside work with the navigation course includes the compass corrections and the magnetic instruments, together with much practical work on charts, this work continuing with the recitations throughout the year.

The youngster begins his Ordnance instruction with drills. There are fifteen such periods during this year. The major portion of these, all except three in fact, are devoted to small-arm shooting on the range where he continues the course which he began during his first summer at the Naval Academy, and has continued by four periods his

plebe year. The effort is made to qualify all midshipmen as sharpshooters and expert riflemen in addition to making them competent to handle the automatic pistol, the service rifle, and the automatic or machine gun. The length of time is hardly sufficient, however, for the mastery of these arms.

The gun drills are held first at the six-inch loading machines where accuracy first, and rapidity second, in loading, are taught. The midshipmen crews work down to about ten complete loads in 39.5 seconds, which is exceptionally fast time. Then, after becoming expert with loading machine, they are exercised at the actual loading of the 5″-51 gun. The second class review the loading drill with casualties and safety requirements, and in addition they are given dotter and boresighting practice together with sufficient sightsetting. The boresighting taught is the most modern method, it being hoped that the older sights in service will gradually be replaced by the later ones, and there is no time to teach more than principles. Just

prior to the end of his second-class year the midshipman is given a week that comprises two days of spotting, one of fire control installation instruction, and two of plotting in order that he may have a good general idea of what comprises the installation for governing the battery before becoming a first classman upon his summer practice cruise. At the Academy during first-class year these fire control drills take the major part of the time allotted to ordnance, although there are four days devoted to torpedo practice and one day to handling mines. A little torpedo boat, the *Biddle*, of 175 tons displacement, takes the midshipmen into the bay where they adjust and fire a torpedo, man a boat, recover the torpedo, return to the ship and hoist it aboard, taking all the steps necessary in the most approved manner. The mine drill consists of the assembly by the midshipmen of three types of mines, which are then inspected. The faults and omissions in this work are pointed out. Every first classman also handles a range

finder, makes all the adjustments, and by personal touch gets familiar with the instrument even though the following did take place recently:

MIDSHIPMAN.—"This range finder is not very useful in a fog, is it?"

INSTRUCTOR (a most fitting retort).—"No, and neither is it of any use to a blind man." This all helps the instruction and relieves a little of the humdrum of routine.

The midshipman thus has a great variety of practical work of all types, too little in each to permit of his becoming an expert or to bring monotony to him but sufficient to ground him in the rudiments of the naval profession. The comprehensive grasp he attains of the general scientific and mechanical apparatus, with the knowledge of its limitations fits him to hold the position of an officer, who must understand his tools, be they located on the bridge, the turrets, or the engine room platform, if he is to efficiently direct a ship or squadron.

CHAPTER VIII

RELIGION—DISCIPLINE—MORALE

"Historically, good men with poor ships are better than poor men with good ships."—MAHAN.

THE dome of the Naval Academy chapel is the first object that greets the eye as one approaches Annapolis either by land or sea. As the grounds of the Naval Academy are entered, this chapel is the most conspicuous building and is ever present from all parts thereof. Possibly it was thus planned in order to keep within the horizon of the midshipman's life the fact of the existence of the Creator of all good, if such a reminder be deemed necessary by any, or to kindle his zeal and industry as he realizes that in its crypt rest the remains of the Navy's first noted sailor, John Paul Jones, who gave to

the United States Navy its first traditions of heroism and victory. When in later years he is on a gunboat or destroyer that is fighting for its very existence in a yelling tempest, battered by the swinging smoking seas, the midshipman may feel his heavy heart cheered as there comes to his mind the beautiful altar window of the chapel which depicts his Redeemer walking upon the waters, the controller of the winds and seas today even as then.

The regular "Official Divine Service" is held in the chapel every Sunday morning at 10.40. All midshipmen are required to attend except that those who are Roman Catholics, together with a few of other denominations who have obtained the necessary permission, are allowed to attend the service of their choice in the city of Annapolis. All march to and from their quarters to services in military formation. In the chapel the service is non-sectarian in character though the Navy Regulations permit all chaplains to conduct their service according to the

form used by their own religious bodies. Being himself a sea-going officer, the Chaplain is able during his addresses to impart the viewpoint of the sea, and to give proper advice to the midshipmen on all points which tend to build up and strengthen character, the strong foundation of success on the sea as well as on the land. Occasionally the sermon is delivered by some distinguished visitor.

The service is hearty and inspiring, conducing to the love of one's country and is undoubtedly of vast benefit to the midshipmen. As is the case anywhere, midshipmen do not always concentrate their attention on the remarks but at intervals let their thoughts and eyes wander to the gallery where sits the young lady whom they escorted to the hop last evening and with whom, after chapel, they are to stroll in the grounds and inspect the glories of Bancroft Hall; nevertheless, in spite of such distractions, a net gain in character must result. The Chaplain finds many proofs of this in his daily ministrations, and there



THE NAVAL ACADEMY CHAPEL



are many midshipmen who, though not affiliated with any church, when they entered four years earlier, leave the Academy as regular members of some denomination. There is every Sunday morning a voluntary "Early Service," to which all who are communicants of any Christian body are invited. Nor is there a poor attendance at these services.

Midshipmen assist at Sunday School held after the morning service for the children of the officers stationed at the Academy or living in the city, who with their guests comprise an important part of the Chaplain's congregations. A mid-week Bible class for advanced study is conducted by the Chaplain and is well attended by the midshipmen.

On Sunday evenings, immediately after mess, the Naval Academy Y. M. C. A., which is a local body, holds meetings in Memorial Hall. A useful handbook for midshipmen called *Reef Points* is published by this organization, which also provides the reading matter found in Memorial Hall. The speaker is generally a visiting clergyman,

or Christian worker, perhaps a Congressman or a physician, or a leader in Army or Navy life, invited for the evening. The attendance is always large, and is, of course, voluntary. Though under the supervision of the Chaplain, the midshipmen conduct the meeting themselves, choosing their own speaker. As in all other assemblies of the Academy, the time limit is sharply drawn, for at eight o'clock, by which hour the meeting has lasted not over forty minutes, all midshipmen must be in their rooms to "bone" until 9.30 in preparation for the recitations of the morrow.

The daily prayers, said after breakfast in the mess hall by the Chaplain while the midshipmen stand at parade rest, and the one attendance at church on Sundays are the only compulsory features of the midshipman's religious life. These help him to realize that he is not merely an individual but is a member of an organization even in his devotions, as is evidenced by the prayer for his brothers in the fleet, by the one for his fellow

members in the Academy, both of which he hears every Sunday morning, and by the hymn which closes every divine service commending to the care and protection of the Eternal Father, all "Those in peril on the sea."

On a Sunday evening just prior to graduation a copy of the Students' Oxford Bible, bound in flexible leather of durable and convenient size for use aboard ship, is presented to each member of the graduating class assembled in Recreation Hall by the American Seaman's Friend Society, a fitting address being delivered at the same time by its secretary, the Rev. Dr. George F. Webster, or by some other appropriate person chosen by the Society.

The morning and evening salute to the colours, together with the patriotic sermons and addresses heard often in the Chapel, serve to quicken the spirit of loyalty and devotion to country. The flag is made the subject of frequent remarks that tend to implant its meaning firmly in the heart of the midshipman. The purpose of the Navy

is indicated in that prayer made each Sunday that it may be a safeguard to all those who use the sea upon their lawful occasions. The primary reason for the Navy and for the necessity of keeping that arm of national defence in a continual state of readiness, is well and similarly brought out by a famous admiral who says:

"Heaven gives the crown of victory to those only who, by habitual preparation win without fighting, and at the same time forthwith deprives of that crown those who, content with one success, give themselves up to the ease of peace."—Togo.

On the Sunday just prior to the graduation ceremonies is delivered the final address to the graduating class, the last religious service the midshipman hears in the Chapel, and at the close of the service the hymn "God be with you till we meet again" is sung with great effect by a quartette from the organ balcony.

Religion in the daily life ot the midshipman is thus a useful and essential part of the



Photo by McAboy

MASON MEMORIAL WINDOW. PORTER MEMORIAL WINDOW

THE INTERIOR OF THE CHAPEL



education at Annapolis, never being unduly thrust upon him but being made an ever-present, strong influence in the moulding of his character.

The discipline of the Naval Academy well illustrates the principle that in every community discipline means simply organized living. It is the condition of living right because without right living, civilization cannot exist. Persons who will not live right must be compelled to do so, and upon such misguided individuals there must be placed restraints. To these alone is discipline ever harsh or a form of punishment. Surely this is just as it should be. The world would be better if such individuals were made to feel the tyrannical, unyielding, and hard-mailed fist in order to drive them from an organization to which they have no right to belong. That there are unfortunately some such curious personalities in every large organization is however, a truth, that must be admitted.

This discipline is not harsh or hard nor are undue restrictions of any kind placed on the midshipmen. Discipline consists only in the regulating of the conduct and the daily routine of the life of the members of the regiment, to the end that the maximum results mentally, physically, and morally may be attained, and that all may share alike in their opportunities both for work and for play. Regulations and orders, therefore, take the form more of guides to procedure than the assignment of punishment for the infraction of proper conduct or misdemeanours. The routine and the organization of the regiment are the result of many years of gradual development, with constant improvement under the guidance of the various able seamen who compose the faculty or Academic Board from time to time. The view taken by them has been always that the final product is the object to be striven for, and that the development of a thorough seaman who will be an addition, an asset, to the efficiency of the battleship, light cruiser, destroyer, or

submarine of whose personnel he will soon form a part, is their ultimate goal.

The present Commandant of Midshipmen, Captain L. M. Nulton, U. S. Navy, thus tritely expresses the end sought by the discipline and training: "The objective is the fleet, the doctrine is responsibility, and the problem is the formation of military character."

As before stated there are no unnecessary regulations, there is a good and sufficient reason for all, and furthermore there is no endeavour made to hide this reason. On the contrary the regiment is taken into the secret, if there be one, as to the whys and wherefores of all rules made and enforced. Such explanation of the organization and discipline of the Naval Academy is made as a whole in the lectures given to the new fourth classmen one night a week during the summer.

The officers administering the affairs of the Naval Academy, having had the same training that is being given the midshipmen, together with the broadening experience of

their lives on the high seas and in command of men, are in thorough sympathy with the midshipmen, and enjoy the opportunity for training and character building afforded them by a tour of duty at the Academy. The bond uniting the service was well expressed by one present Head of Department when he said: "I love the midshipmen, and some day I look forward to becoming their commandant." Midshipmen are thus trained and educated by men in thorough sympathy with their point of view, men who realize the difficulties and discouragements to which they are subjected.

The standard of honour maintained at the Naval Academy is the highest possible. It is assumed that a midshipman instinctively tells the truth and that any statement, written or oral, made by him contains nothing but the facts expressed in language capable of but one interpretation.

The main function of demerits is that of record, in order that midshipmen may be



Photo by McAboy

THE CRYPT OF THE CHAPEL

THE SARCOPHAGUS OF JOHN PAUL JONES



classed in their ability to obey as well as in their proficiency in studies. Many a battle has been lost by this inability, inherent in some personalities, to obey. "The man who has not learnt to obey, is wanting in the first essential of command," is the manner in which this truth has been so well expressed by the late Rear Admiral Sir Christopher Cradock. The brightest young man without the power and inclination to obey orders in their entirety will develop into an officer who is not only useless, but a menace to his ship and his country.

Needless infractions of rules,—as smoking, for example—are an indication that the midshipman guilty of them is not willing to abide by the just rules of an organization of which he is a part, and, therefore, that he should leave the Academy in order to make room for the many boys who are equally competent mentally, and in addition are willing to recognize that the regulations have been established and approved by successive groups of men who have gone through this same training

and have added to it their years of experience on the high seas, and that, therefore, these rules should be cheerfully, loyally, and strictly obeyed. That rules must be obeyed is a fact that is recognized by the business world as well as the Navy, as a recent example will illustrate. A firm to whom a midshipman, bilged for repeated infractions of the smoking regulations, had applied for employment stated that, although smoking was not necessarily against any of their rules, yet the fact that he, while a midshipman, had not chosen to obey the rules of the organization of which he then formed a part, that is the regiment of midshipmen, was sufficient to condemn him in their eyes, and so they had concluded he was not the type of man they desired in their organization.

Responsibility is a word that covers much and means much to the very life of the Academy. To the service, responsibility coupled with loyalty and obedience is essential to the efficient existence of our Navy and the upkeep of its traditions.

Is not the acquirement of self-discipline one of the greatest responsibilities that a naval officer has? To be a leader of men such an appreciation of the value of responsibility is essential and ought to be every graduate's ambition. The discipline of the Naval Academy, as indicated in its rules or guides to conduct, endeavours thus at the outset to inculcate self-discipline by making the midshipmen consider the humanities of life, the spirit of the service, and appreciate that the value of each to the service is going to be the greater the more each realizes his responsibility, in whatever position he may occupy, in what concerns the welfare and service of his future men.

In instilling the sense of responsibility the many able sermons that are delivered on Sundays in the chapel contribute a large impulse. Visiting chaplains and clergymen all assist in the work, point out the fact that the fleet is the doctrine and that the man who is to be of value there must possess responsibility, else he will never be a leader. Respon-

sibility does not come without hardships or restrictions; the leader is less free than his men. He has not only certain work to do, but is responsible for his own and that of others as well. This sense of responsibility to others as well as to one's self cannot be appreciated without experience, and the organization of the Academy was planned materially to aid the acquirement of such responsibility and to teach it progressively.

There is an unofficial organization of the midshipmen that assists the discipline and the maintenance of a high honour standard. When the "plebes" become "youngsters," the class holds an election for the class officers consisting of a president, a secretary, and a treasurer, together with members of the hop committee, and a representative of the class on the executive committee of the midshipmen's athletic association. The last mentioned office is also held by a fourth classman, this being the only elective office for a midshipman of that class.

The position of president of the class is



THE CHAPEL THROUGH THE ARCADE



one that is very important to the welfare not only of the class but of the discipline of the Academy. Many infractions against honour are prevented through the influence of this midshipman and not infrequently discipline is much aided. Sometimes a statement in regard to an offence is submitted by the midshipman accused thereof, that, on the face of it, may be true, yet is in reality a lie. Such an evasive and dishonourable statement cannot be detected by the authorities, who consider the midshipman's word as good as gold. Often it happens that the midshipman who has made such a statement is detected therein by his class, and through the class president a court of honour, or call it what you will, is held, and the midshipman dealt with severely for his insult to the morals and honour of the regiment. Resignations have followed as the result of such proceedings. The midshipman is jealous of the honourable character of his calling and strives his best to maintain the standard set before him by the officers of the Navy.

The "Articles for the Government of the Navy of the United States"—or as they are more usually called in the service, the "Articles of War"—must be read by each midshipman each month and report must be made by the midshipman to the officer in charge of his battalion that this requirement has been complied with. These Articles, state that: "The commanders of all fleets, squadrons, naval stations, and vessels belonging to the Navy are required to show in themselves a good example of virtue, honour, patriotism, and subordination." If the midshipman follow only the spirit of this precept, he cannot go far wrong in his career.

CHAPTER IX

PHYSICAL TRAINING AND MEDICAL CARE

"A sound mind in a sound body is a thing to be prayed for."—JUVENAL.

THE whole direction of the physical welfare of the midshipman is entrusted to the athletic officer, whose duties comprise the physical training of the entire regiment through gymnastic work, athletic exercises, and competitions between classes and with other institutions in all branches of sport. The tendency to develop the popularity of sports within the institution at the expense of decreasing outside competitions is very marked. In common with other schools, this tendency is increasing because interclass competitions develop the many, who have the prior right for consideration, instead of

the few, who, by reason of especial ability and physique, are able to be members of the Navy team in various athletic contests.

The physical training consists, then, of the gymnastic work and of the athletic sports of all kinds. In 1912 a compulsory system of gymnastic physical training was applied and the effort was made to stimulate a desire for uniform development by spreading the athletic material in more branches of sport, thus interesting more midshipmen and so increasing the net physical benefits. The dynamometer strength test on the Kellogg system of measurements is now in use. The surgeon, who is especially charged with the physical development of the midshipman, examines each midshipman once a year, in April. In this test the strength of practically every working muscle is measured separately. A standard of strength, in accordance with the height of the individual, is established for each muscle. This standard increases with each year of the course, thus insuring a progressive development. The midship-



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PHYSICAL DRILL. SWEDISH SYSTEM. STRETCH, STRIDE, POSITION



White Studio

SWIMMING INSTRUCTION

READY TO DIVE



men are then classified as strong or weak, and physical cards are furnished each showing his strong or weak points and indicating the exercises prescribed to bring the weak muscles up to the required standard. Midshipmen who have five or more strength deficiencies are required to take two and one half hours of compulsory drill in the gymnasium per week in addition to the routine gymnastic drills. For the compulsory or weak squad drills the midshipmen are arranged in groups according to their weakness or physical deficiencies and are given suitable exercises with the ultimate hope that they will gradually attain the normal physical development of all muscles.

General gymnastic drills are continued throughout the entire four years, the last year being devoted to the object of training the graduating class to be instructors of enlisted men on shipboard. There can be no doubt that men normally developed to a reasonable standard at the time of their graduation from the Naval Academy are

especially well fitted for the Navy from a purely physical point of view. The primary object of all physical exercise at the Naval Academy may be said to be the development of the physique in a symmetrical manner and to such an extent as to conduce to the present and future physical and mental well-being of the individual under the varying vicissitudes of the naval service, and to this end all exercise is made pleasurable, adapted to the physiological age, equable, and fairly continuous.

In gymnastic work the Swedish system of physical training, modeled somewhat upon the British Navy Manual, has been the standard since 1912, and its results, as compared with those obtained by the previous systems or lack of systems in vogue, have justified its continuance as a most important part of the curriculum, as obligatory as is navigation and all other studies. It should be noted that the adoption of the compulsory gymnastic training was forced as one of the natural consequences of the abandonment of

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Academy, and so a brief description of some of its features will be given.

The benefit of this system, combined with the regular life and the good food, is indicated by the records. The average gain in weight for the first six months of attendance at the Academy is nearly ten pounds per man, so that a class of two hundred men takes on about a ton of flesh. The added weight does not consist of fat, but of muscle, bone, and sinew.

The exercises for each day are so arranged that they affect the body in a progressive way, the classes of movements following each other in the same way. A typical schedule for a day follows:

1. A light work-out for the entire body in order to get the blood circulating and to loosen up the muscles and joints. The exercises consist of formation of the class, dressings, facings, and openings.

2. Leg exercises stimulate the circulation of the lower extremities and by bringing blood to these parts exert a calming effect on the respiratory and heart action.



VIEW OF THE ACADEMY FROM ANNAPOLIS HARBOR



3. Span bending exercises develop the upper back muscles and stretch the chest muscles and so counteract the cramping brought about by bad posture, or excessive work on ordinary gymnasium apparatus. These keep the chest supple and favour lung expansion.

4. Heaving exercises aid in the production of a good carriage.

5. Balance exercises are designed to affect the nervous system and its relation to co-ordination. Attention is required until the antagonistic muscles are trained to work together.

6. Dorsal exercises affect the muscles of the spine and thus make for the erectness and the extension of the body.

7. Abdominal muscles are strengthened and the hollow back (a prevalent condition) prevented by the next exercises on the day's schedule, which also aid the digestive organs.

8. Lateral exercises follow in order to improve both sides alike, separate the ribs, make the chest more supple and resilient,

benefit the abdominal organs and give suppleness to the carriage of the body.

9. Jumping and vaulting exercises require control, develop judgment, presence of mind, quickness of movement, resource, courage, and the ability to turn a quickly formed idea into action. One acquires the habit of using just sufficient muscular action and no more. The nervous system is exhilarated. The form in which the acts are done is the essential thing and not the length or height of the jumps and vaults.

10. Breathing exercises, used next, employ the muscles of the respiration and result in mobility of the chest.

11. Marching and running exercises give the body a free and easy movement and tend to improve its carriage. The progression in running is gradual, the duration never exceeding five minutes. A slow dog-trot is the approved gait.

12. *The day's order* is completed with light exercises, the movements preponderating being the slow leg and the breathing

exercises. These not only calm down the nervous and blood-circulating systems but act as correctors of posture.

Progression is kept up by performing all exercises but four times, and the most violent only once. The changes from easy to hard exercises are only made after good form has been attained.

A great point is made of the method of using the "words of command," in order to properly fix attention and set up nervous impulses to the muscles concerned which are a direct response to an effort of the will. An effect of mental concentration on a muscular movement is illustrated by noting that, the muscle group directly concerned in throwing the leg forward in running or walking is the only group that strength tests of midshipmen have proven to be stronger on the left than on the right side, this undoubtedly because of the necessity of stepping forward with the left foot first in all military formations.

"Form" is insisted upon in order to obtain the highest degree of benefit from the exer-

cises. An apparently easy exercise in bad form becomes a difficult one when the proper form is maintained. Printed instructions as to the proper time for any kind of exercise and bathing are furnished each midshipman for his guidance, so that he cannot go wrong through ignorance of what is right in the matter of acquiring and maintaining a good physical body.

That an officer should be thus sound is recognized as a principle and, in the later years in the service, a certain amount of outdoor exercise each calendar month and a physical examination held at the beginning of each year are prescribed.

Compulsory physical training was adopted, as has been seen, because of the lack of the former opportunities given by the practice cruise by which the necessary strength was acquired, and has proved very beneficial to the midshipmen, the results indicating that the system chosen is a good one. Of the 479 midshipmen who failed to qualify in strength in an October test but thirty

remained the following May, these with but minor deficiencies. This compulsory training in the Swedish system begins upon entrance, and is continued during the entire summer for from one and a quarter to one and a half hours on four days of the week. The influence of these exercises upon the fourth classmen is very marked. They are enabled to assume the correct carriage of the body, the chest being developed very materially, the joints loosened, contracted muscles stretched, and the spine adjusted. It is a problem how to counteract the bad positions and forms assumed by midshipmen during the study and recitation hours. The limited amount of physical drill is not sufficient to accomplish this, and so the gymnasium must provide the substitute by its adoption of the best systems known. As used in the gymnasium the Swedish system appears to have accomplished much in developing the following desirable qualities in the midshipmen: muscle control, self-reliance, courage, alertness of perception, quickness in response

both mental and muscular, erectness of body, symmetry and endurance; besides which it has given them generally improved health and physique. The undergraduate does not always take the view just given of the gymnasium drills, judging by remarks printed in the *Lucky Bag* to the effect that: "Time was when First Class gym drills were fun—then they became work—now they are torture."

The swimming pool is a large, inviting one, ninety feet by sixty feet, filled with clear fresh water that is kept in an absolutely sanitary condition at all times. The water is filtered through sand and gravel after first having been treated with alum and soda and a solution of chlorinated lime. In this pool are held the swimming contests with many colleges. Before graduation every midshipman must be a qualified swimmer: he must be able to swim 150 yards in seven minutes, know three strokes well, dive creditably, pick up objects at depths of eight feet, and be a capable life saver. In May of each year there are still members of the first

class struggling hard to pass this examination in swimming, which is by no means a perfunctory one.

The floor of the gymnasium contains six handball courts, which are always occupied during recreation hours, the sport developing agility and accuracy in a very marked degree.

The need for more infantry drill to straighten the carriage has been indicated, but no time beyond that now allotted can be thus spent. The marching in military formation to and from recitations, to drills, and to meals, all assists in forcing an erect and military carriage. The layout of the grounds is such that during the day the midshipmen are enabled to get a little rest from the section rooms and their study room in the marching from Bancroft Hall to the Academic Building, the Steam Building, or the Armory, and Seamanship Buildings. These little breathing spells during the day contribute materially to the physical welfare of the regiment, and the midshipmen naturally enjoy them even during inclement weather.

Now that the methods taken to insure sound strong bodies have been considered, attention may be directed to the care taken to prevent illness and the means adopted to make the sick recover their health.

The bugle sounds the mournful sick call daily, immediately after breakfast, at which time a medical officer of the staff of the Academy will be found in Sick Quarters, as a few offices and rooms on the fourth floor of Bancroft Hall are designated. Any midshipman who is ill or has an injury such as will incapacitate him from duty of any kind, is examined, treated, or returned to duty as the result of this examination may warrant. Unless a midshipman is really unfit for study or drill, it is seldom that he is able to "pull the list" and be excused therefrom, no matter if he is unprepared for recitation through some misadventure or lack of foresight. Attendance at recitations and drills is compulsory unless ill health or injury prevent. The climate of Annapolis during all months, excepting those of December, January, Febru-

ary and March, is conducive to good health and general well being. The four months mentioned are, viewed from the standpoint of health, hard months, and the sick and hospital lists then contain the names of many midshipmen. The openness of the winter and its frequent short periods of cold immediately followed by heat cause grippe and pneumonia, which are unfortunately too prevalent.

Cases of sickness for a week or more are always sent to the modern and well-equipped Naval Hospital, located just across Dorsey Creek on a high bluff, on the ridge that was known as Strawberry Hill, overlooking the Severn and the harbour. It is a wonderful location, and if there be a power in the seeing of beautiful nature to heal and restore to strength, then this hospital possesses that factor in the treatment of the sick in perfection.

Minor injuries are frequent in drills and athletics. The "plebes" in their first summer always have much trouble with their

feet, due partly to new shoes and partly to the new strenuosity of the midshipman's daily life. Football produces many hard bruises and occasionally a broken bone, though of late years under the modified rules of the game such serious injuries are infrequent.

The morning sick call is supplemented by one in the afternoon at five, that is, immediately after the drills of the day. Any sudden illness that may occur at other times is always attended to immediately, there being a surgeon in constant attendance. Many midshipmen attend such sick calls and the record for the year ending December 31, 1915, shows:

Admission and readmission	1433
Total number of sick days	2840
Daily average of patients	7.8
Percentage of sick	1.6
Transferred to hospital	271

Medical Director, A. M. D. McCormick, the medical officer in charge of the health of the midshipmen at the Academy, has









THE CREWS



kindly written for this chapter some interesting facts. He says:

"In order that the material of the personnel of naval officers may compare favourably with material of the ships on which they sail, great care must be exercised at the start in selecting young men who are to receive commissions. Therefore, the physical examination of candidates for midshipmen is very rigid, corresponding to the very thorough inspection of steel for building purposes, and this is not all, for each year at the Academy a midshipman is subjected to another test to ascertain how he is standing the strain. So there are five physical examinations before a midshipman is declared to be fit for the trials of the naval service, to the end that in the Navy of today there may be iron men on iron ships, not, as has been said of old, iron men on wooden ships nor wooden men on iron ships. From the time of a midshipman's appointment the medical officers of the Navy have supervision over his health, and the greatest care is taken that

he may be a valuable asset to the Government, which expends so much on this unit of preparedness. As soon as practicable after entering the Naval Academy, he is vaccinated against smallpox and inoculated against typhoid fever, thus the danger of two diseases is eliminated.

"The air a midshipman breathes, the water he drinks, the food he eats, and the light he studies by, and many other conditions which concern the health of the midshipmen, are under medical supervision. The site of Bancroft Hall was chosen for its orientation and facility for cross-ventilation, facing eastward, thus having the greatest amount of sunshine, and the prevailing breezes from Chesapeake Bay, and also having sufficient elevation for drainage and a proper sewerage system."

The most important article of food is milk and thanks to Pay Inspector Samuel Bryan no institution in the world has better milk. While serving as commissary of the Academy this officer made up his mind that the milk

was, in every way, of an inferior quality, that it was supplied by unsanitary dairies, and that this one article of food was responsible for practically all intestinal troubles. After much difficulty, he succeeded, in August, 1910, in obtaining authorization to use twenty-five thousand dollars from the midshipmen's store account to establish a dairy. The land used was part of the government farm, and in December, 1912, he had proceeded so efficiently that there were two barns, three two-hundred-ton silos, and a herd of one hundred and twenty cows. And the former sicknesses from gastro-enteritis, tuberculosis, typhoid fever, and septic tonsilitis, which had caused great havoc among the midshipmen, were absolutely eliminated. At the beginning of the academic year, 1912–1913, the dairy first began to supply all the needs of the midshipmen. Milk that meets certified requirements is sold to the midshipmen for forty cents per gallon, a very considerable reduction from the sixty cents charged in neighbouring cities. The dairy is inspected

regularly by the Bureau of Animal Industry of the Department of Agriculture, and is usually rated above 97.63, its rating of September, 1914. The bacteria count is less than 3000 per c.c., instead of the 10,000 per c.c., considered allowable for certified milk. In New York City 100,000 per c.c. is the limit for Class A milk. The land becoming insufficient, it was deemed necessary to seek another location. Congress, in March, 1913, appropriated $100,000 for a dairy; and for $56,725 there were purchased at Gambrills, ten miles north-west of Annapolis, 771 acres to which the dairy was removed. Its capacity is 250 gallons daily.

Doctor McCormick says: "The results obtained through the dairy have been widely published by the Bureau of Animal Industry as a practical demonstration of what can be accomplished along these lines. About four hundred requests have been received for information concerning equipment and methods of the dairy and, through the report of the British Attaché, the dairy has been re-

produced at military stations in India. Not only have gastro-intestinal maladies been so much reduced, but tuberculosis and typhoid fever from impure milk have been eliminated.

"The greatest care is taken with all food-stuffs. All the meat is Government inspected. The flour is made into dough by electric mixers, so there is no sweat of the brow to be eliminated. Raw vegetables, such as celery and lettuce, are thoroughly washed before using."

The farm on Greenbury Point, purchased in 1910, comprising 180 acres, contributes most of the food supply for the dairy herd, and some vegetables, such as potatoes, to the midshipmen's mess. A herd of hogs is being raised there according to most approved methods, the waste from the mess supplying their food. This insures absolutely safe pork and ham to the midshipmen. In addition, chickens are now being experimented with, both for food and for eggs.

Doctor McCormick continues:

"The water is obtained from two artesian

wells at a depth of six hundred feet. It is pumped into settling tanks to rid it of salts of iron and filtered twice before being used for drinking purposes. The ice required is made from this twice filtered water. Bubbling faucets are installed in Bancroft Hall and the common drinking cup has been abolished.

"Three boards composed of medical officers and a civil engineer have examined and made recommendations in regard to the lighting system of Bancroft Hall. The recommendations were carried out at an expense of $12,000, requiring a special appropriation for the purpose. This included special kinds of lights, tinting the walls, etc., the main object being to obtain three-foot candle-power light on the study table, which is considered the proper light for studying purposes.

"Eyes and ears are the organs that suffer most at the Academy, the former because there is much close application in studying and drawing by electric light, which is a bad light as far as hygiene of the eyes is concerned;



THE START. QUARTER-MILE RUN



the latter on account of climatic conditions, causing catarrhal inflammation of the air passages involving the middle ear. In order that vision and hearing may not fail and be causes of rejection, many cases are referred to Navy specialists. The wearing of ear protectors while firing on the target range is compulsory.

"Many minor details in the interests of the general health are carried out. For instance, in the barber shop hair brushes are abolished, and combs are kept in a weak solution of carbolic acid. The shoes worn by the midshipmen are the result of the recommendations of two boards, and an endeavour is made to have them properly fitted. The wrestling mats, which are common sources of infection, are regularly washed with antiseptics and exposed to light.

"All teeth are required to be permanently filled on entrance, and, in addition, two dental surgeons are continually working to keep them sound. A complete chart is made of everyone's teeth, on which is re-

corded the condition when entering and the work done subsequently.

"Being on the lookout for and excluding contagious diseases are about the most important duties of the medical officer at the Academy. Although scarlet fever, diphtheria, measles, chicken-pox, and mumps have been prevalent in the city during the past year, only one case of a contagious disease occurred among the midshipmen, so this fruitful source of damage has been offset by watchfulness.

"So it is seen that in all directions nothing is too small to be of importance in caring for and fitting the raw material to be the finished product of a naval officer."

CHAPTER X

ATHLETICS

"At all times—blow high, blow low—play, play the game."—CRADOCK.

FOR a long period after the founding of the Academy athletics did not exist. To Vice Admiral David D. Porter is due the credit of the establishing of athletics on a firm and lasting basis. In 1866, soon after becoming superintendent, he actively encouraged all forms of athletics, with the result that serious athletic work was begun in 1867. Class baseball clubs were formed, rowing was started, and a gymnasium was fitted up in the barbette of old Fort Severn.

This interest in athletics improved the whole tone of the institution, and the voluntary forms of sports answered the needs

fairly well until 1890, when, Porter's doctrines slacking up, it was again felt that compulsory and systematic athletic work was necessary for the welfare of the midshipmen. Not only scholars but fighting officers were needed for the Navy, men whose nerves and body were ready for use at their highest efficiency in the critical hour. In that year Colonel Robert M. Thompson, a member of the class of 1868, aided most materially the officers stationed at the Academy in the formation of the Navy Athletic Association. Under the guidance of this organization athletics took a fresh impetus, have prospered, and the enthusiasm for sports has since been maintained.

The necessary funds for the carrying on of athletics are provided by the Midshipmen's and the Navy Athletic Association, subscriptions being called for each year from midshipmen at the Academy and from officers the world over. All branches of athletics are now carefully fostered under the strict regulation of an officer of the Executive

Department specially charged with this duty; competitions between classes and with other schools are arranged so as to form a continuous series of athletic contests that take place practically every Wednesday and Saturday afternoon throughout the entire academic year.

The regulation of athletics is the result of much careful thought and of statistics based upon what is best in view of the future life of a naval officer. From a physical standpoint the conditions on board ship force a comparatively inactive life, and therefore the overdeveloped athlete is less liable to withstand ship life than is the man of average physique.

Serious inquiry is going on with a view to ascertain whether by the abandonment of intercollegiate atheltic contests and the greater encouragement of the interclass sports it would not be possible to greatly increase the number having athletic training of one kind or another. The question is naturally asked how many midshipmen do come out

for the major sports and intercollegiate tests. The resulting answer is astonishing as it lays bare the fact that this present academic year, 1915–1916, there were 452 midshipmen in training for the teams that compete with other institutions, the regiment numbering 918. A doubt, therefore, arises as to whether a decrease in such contests will bring out more men than are already interested. The maximum number out for healthful contests is the goal striven for, and changes in methods must be gradual whenever any are decided upon. The fact that contests by Navy teams with outside colleges develop the Academy spirit and unite the midshipmen as nothing else can or will is undeniable, so that the contests with outside teams are limited by money considerations rather than by questions of policy.

Football claims the first place in popularity and in the enthusiasm it kindles contributing most to the uniting of the midshipmen body. The career of the men on the A and B squads is watched closely, they being the most



STOPPING THE HALF-BACK



marked men in the Academy during the two months that the sport is practised, months of ideal weather, the best that the whole year affords in Annapolis. The class teams, as well as the Navy team itself, have their work mapped out for the season. The "plebe" team has a schedule of games with high schools. The contest with West Point, held in New York City about Thanksgiving time, furnishes the climax for this sport. These games began in the year 1890, and for four years they were played alternately at West Point and Annapolis. Then after an interruption of five years the contests were resumed in 1899, and took place, with the exception of one game at Princeton, either at Philadelphia or New York, the latter city being the present (1916) scene of the annual Army and Navy football game. The entire student body of both the Military and the Naval Academies, with the exception of those specially restricted because of reprehensible conduct, attends these games. At the opening of the season of 1916 the score

in games stands: Army ten victories to the Navy's nine, one game having been a tie.

The coaching is under the direction of the officer specially detailed to supervise the physical training of midshipmen. As an assistant, a college man of prominence on the gridiron is always selected. In addition, a competent trainer to watch over the physical or muscular condition of the midshipmen is always present and contributes to the successful development of the midshipmen by his vigilance and care, removing the sores and bruises as they appear.

As candidates for the Navy team and the class teams a large number of midshipmen are engaged with all their might in this sport, which is considered to contribute more largely than any other to the development of skill, courage, initiative, and sound judgment.

> "*You ought to see the Navy team*
> *When they're getting up steam,*
> *When they've got the ball,*
> *You can't stop them at all.*"

Those who make up the many songs and cheers necessary to keep the regiment's enthusiasm at its highest pitch, and thus encourage the team, are as busy as those training and fighting for a place in the line up. Farragut Field, with its iron stand for the spectators, built by subscriptions of the service, is the place where the games are held during the season.

Baseball started at the Academy in 1867 with the teams of the classes, such teams as the "Nautical" and "Severn" being in their day quite famous. Class games and intercollegiate games fill the spring season from March 25th to graduation, three games a week being not unusual. These are well attended by the regiment, which always hopes for a victory in the final game with West Point in spite of the eight successive victories of the Army. The diamond is worthy of comparison with that of any major league club and far more picturesquely located. One is rewarded for going by just enjoying the prospect at Worden Field whether the Navy

wins or not. The officer coach supervising this sport is likewise assisted by a professional player, who does good work with the Navy team in the two months at his disposal for the training and developing of players. Part of this period is much too cold for baseball, as a result of which the season ending the last Saturday in May with the game against West Point seems very short.

Out of the fifteen games that have been played by the academies of the sister services including the game of 1916, West Point has won twelve. These games are staged alternately at West Point and Annapolis, so that only every other year do the cadets and midshipmen see the annual baseball contest.

Rowing for a long time was popular, but because of the lack of suitable shells and equipment, became nearly a dead sport until the '90's when, mainly through the efforts of Naval Cadet Winston Churchill, it was put on a secure basis that has rendered it a successful part of athletics. Six shells are now in use practically all the open months.









TRACK AND FIELD SPORTS



The year 1893 saw the first Navy eight. The races are usually pulled over the two-mile course—although for several years, 1913–1915, the length of course permitted was but one and five sixteenths miles—on the Severn above the county bridge, Pennsylvania, Harvard, Cornell, Analostan, and Syracuse being regularly scheduled. The crew's outing consists of a trip to Philadelphia to row in the American Henley. There, in 1916, the Navy took second place in the Child's Cup Race, Princeton being first by only one third of a length. The other competitors were Columbia and Pennsylvania. The second crew of the Academy (1916) rowed in the Henley regatta, in which the second crews of all colleges compete.

The basketball games, held in the armory during the season extending from the close of football to nearly the opening of the baseball series, claim much attention and are always exciting and interesting contests. The armory contains four basketball courts, as a result of which facilities the training of

the Navy and the class teams goes on with practically no interruptions. As a general rule the rating among the colleges, of the Navy basketball team is very high, the season always being quite successful. The Navy lost but two games this year and even beat Pennsylvania, which won the intercollegiate championship of the East.

The gymnasium and wrestling meets, held during the winter season, reveal the presence of many fine tumblers and wrestlers among the midshipmen. In the past four years they have lost but one gymnasium meet to their opponents, which have comprised teams from such colleges as Pennsylvania, Pittsburgh, Yale, Penn State, and Princeton. The gymnasium team never lacks candidates, the sport being intensely interesting to the participants and being surpassed by no other sport as a means of physical development. The most popular of all the indoor sports seems to be the wrestling in these gym meets, and the Navy has had for many years the best wrestling team in the East. As the

Lucky Bag expresses it in referring to this sport: "One scene predominates—the gym —the mat—and a Navy man standing amidst the delirious cheers of the multitude, arm upheld by the referee—Navy wins!"

The results of the various fencing meets with different universities and Fencers Clubs prove that the use of the foil and sabre is not yet a forgotten art, and each year sees experts with both weapons among the graduates. The "Little Iron Man," as the intercollegiate championship emblem is known, is still the property of the Navy fencers. It was secured April 22, 1916, at the meet in New York, on which occasion the Navy won the team intercollegiate championship in foils, the individual prize in sabres, and the first place for novice fencers. Membership on this as well as on other teams, is not the exclusive right of upper classmen. The "plebes" are always welcome in athletics, and on this fencing team was one "plebe" who distinguished himself although he had had but one short academic year in which

to perfect himself in a sport in which but little experience is usual prior to entering the Academy.

Another indoor team that claims much popularity is the swimming team, which also competes with many of the college teams of the country. The dashes, plunges, and diving held in the clear pool are always close contests, and create much enthusiasm and interest.

The fast and exciting game of lacrosse is the most recent of the athletic sports adopted, for it was not until 1907 that this Indian running game was introduced at Annapolis. Both the lacrosse and the baseball games are played simultaneously on Worden Field in the spring season, and lacrosse claims as spectators some ardent baseball fans, coaxed away from the ball game in progress at the opposite side of the field. Until 1915, when all forms of outside competition in athletics were dropped by that college, the victory over Carlisle, the Indian college and the home of the game, was the one most eagerly sought.



A SHOT FOR A GOAL—LACROSSE



Now the hardest game in lacrosse is the annual one with Johns Hopkins University.

Track and field meets take place on Farragut Field. Medals are awarded by the Navy Athletic Association for the breaking or equalling of previous records. In the track and field events as in all others the watchfulness of the medical authorities over the health and well-being of the future officers is manifested by the limitation of one mile now placed upon running races. In 1913, the half-mile, mile, and two mile runs were abolished, but in 1916, the half-mile and mile run were restored. The records made both as regards winning meets and in establishing standards in events are most creditable. From five to six meets with the various college teams take place each spring. The Naval Academy record in the 100-yard dash is 9.8 seconds, in the 440-yard dash it is 50 seconds, in the shot put it is 43 feet 7 inches, in the running broad jump it is 22 feet 7½ inches.

Boxing and soccer football exist as contests

between classes only, no outside competitions being permitted.

The tennis team has every facility for practice and renders a good account of itself in its various meets with the teams from other colleges. Midshipmen will be found on the courts from sunrise to sunset, whenever free from their duty calls such as drills, recitations, and study hours. The exhibition matches played at times by some of the tennis experts have increased the interest in the sport on the part of the team as well as of those engaging in it for recreation only.

In 1910 the Academy rifle team made its last trip to Camp Perry and since then, with the exception of one contest in the spring of 1916 on the District of Columbia rifle range, all matches have been shot at the Academy ranges located across the Severn on Little and Big Carr's Creeks. The charm of the sport is still great enough to claim many midshipmen as its followers, even though the sport requires the giving up of almost all spring liberties and precludes the possibility

of witnessing any of the baseball games. A recent match (May 13, 1916) with the Seventy-first Regiment of the New York National Guard was most exciting. The match over, scores were added with the discovery that each team had made 3256 points. The shooting off the tie was done at the 600-yard range, the midshipmen winning this and the match, 543 to 542!

The bringing out of athletes among the regiment is further stimulated under the direction of the Navy Athletic Association by the contest that continues throughout the year for the Navy Athletic Association Cup, the company whose members win the most points in all types of athletic contests during the year having its name engraved thereon; by the presentation of a sword for general excellence in athletics; by engraving upon the Thompson Trophy Cup; the name of the midshipman declared to have done the most for athletics during the year, and, in addition, by giving individual medals for excellence in all forms of athletics.

The normal incentive of a healthy boy to excel is thus increased by the material gains in prizes and medals that will perpetuate the memory of his skill and strength.

CHAPTER XI

RECREATION

"Don't get downhearted. Go ashore and play golf."—CRADOCK.

THE midshipman finds that in this academic routine of work there is still left much time for pleasure, and this time is sufficient to enable him after graduation to look back upon the Academy days as occasions of pleasure and happy memories. The blue Severn River with Annapolis harbour is a pleasant watercourse upon which to sail the many available catboats and knockabouts; on the September leave, the larger vessels, the cutter *Robert Center*, and the yawl *Argo*, accommodate parties of midshipmen for a week's cruise on Chesapeake Bay. The knockabouts are popular with the midship-

men and are engaged for recreation hours as far ahead as is permitted. Not until a midshipman has passed an examination in swimming, and in handling boats under sail, may he use these vessels other than in drill periods. The officers carefully examine all to the end that accidents and lubberly exhibitions may be minimized. Naturally the authorities wish that the seamanship displayed by the midshipmen, when taking their friends out for a sail on Wednesdays, Saturdays, and Sundays, shall be a credit to the Academy. Both getting away from and securing the moorings require skill because of narrow waters and the gusty, variable winds. Attempting a landing one young middy grabbed his mooring buoy and refused to let go even though the boat's headway carried it beyond and left him struggling in the water, still holding to the buoy, with the result that his two guests had to shift for themselves. Such occurrences damage the reputation of the midshipmen as sailors.

One of the perquisites of the Midshipman

Commander is the neat little knockabout *J. E. McDonald*, which is reserved for his exclusive use. This boat was presented to the Academy for this purpose by the sister of the late Naval Constructor McDonald, the Midshipman Commander in 1892. A signed illustrated roster of the midshipmen who have enjoyed the use of this knockabout upon the river and harbour is kept exhibited in the office of the Commandant of Midshipmen.

Excellence in sailing is rewarded in June Week each year by the presentation to the best boat sailors of prizes, given by Colonel R. M. Thompson, consisting of binoculars to the best and a monocular to the second best.

Cross country walking is enjoyable as the country about Annapolis has many picturesque bits of road, and many spots affording views over the water or over the rolling country may be reached in but a short time. The midshipman wears a comfortable khaki suit and leggings for this sort of exercise.

Horseback riding is indulged in by but few, the supply of good horse flesh being

somewhat limited as is also the pocket money of the midshipman. The golf links, across the county road beyond the marine barracks and the hospital grounds, afford a nine-hole course that is "sporty," and one that affords fine views from every tee and green. The midshipmen who take advantage of these links consider that the periods allowed—Thursdays after four and Saturday afternoons—are well spent.

During the first two months of the academic year the regiment lives and breathes football. The games held on Farragut Field attract a large service attendance from the fleet and from the Navy Department. As a result they are the occasion of much social activity in reunions, and the talk centres on this one sport. During this period studies naturally take a slump in the midshipmen body, and all look forward to their first break in the routine of studies and drills which comes with the trip to New York City for the annual game with West Point. Much thought and energy is directed to the



BOAT SAILING. KNOCKABOUTS AND CATBOATS



TORPEDO BOAT
MINE-LAYING LAUNCH

THE DEWEY BASIN



increase and the maintenance of the enthusiastic support by the midshipmen of their football team. The result is perfect loyalty to and support for the bruised and battered players, who are too sore in body and tired in mind by the end of the day to study lessons with much energy. The cheer leader, song director, and the keeper of the goat are the great factors in maintaining the maximum spirit in the midshipmen all the time. The cheers and songs composed for the occasion are many. The song that has stood the longest test of time and popularity runs as follows:

"Stand Navy down the field
Sail set to the sky
We'll never change our course
So Army you steer shy-y-y-y.
Roll up the score Navy
Anchors aweigh
Sail Navy down the field
And sink the Army
Sink the Army Grey."

The trip to New York, in 1915, was a most successful one when considered only in the

light of the pleasure accruing to the regiment and its exhibition of discipline, and not from the standpoint of successful football.

As the major portion of the battle fleet was anchored in the North River, the midshipmen found many friends and in general enjoyed themselves thoroughly, and, much to the credit of the service, not a man misbehaved by so much as even missing the return train.

The close of the football season is followed by the opening of the indoor season of basketball, held in the large armory or Dahlgren Hall; the fencing contests, the wrestling and gymnastic meets, held in the gymnasium; and the swimming meets, held in the large tank, around which is a gallery permitting the attendance of a great many spectators. Saturdays are crowded with athletics and recreation.

The hops now claim the "fussers," this being the name applied to those midshipmen who are fond of society. The institution of hops began early in the history of the

Naval Academy, a large naval ball being given on the 21st of January, 1847, in the new mess hall, one of the first buildings erected by the Navy Department on the Fort Severn reservation. One rear admiral of the class of '45 states that it was through the dance that the establishment of the Naval School first became known and recognized by the good people of our country, for the widespread circulation of the invitations to the first "Midshipmen's Ball" produced a gathering of the fair sex from all quarters. These dances are now held in the gymnasium, which is decorated in very good taste with flags and lights. There is an attractive receiving stand ornamented with palms and rubber plants and a band stand in which an excellent band furnishes the dance music. The decorations are altered to conform to the season or occasion, such as Hallowe'en, New Years, etc. To be a member of the hop committee is an honour but likewise one that entails considerable responsibility and work. This helps to im-

press upon the midshipmen that honours and responsibility are not empty; distinction entails additional labour. The expenses of the hop programs and the refreshments, the latter usually consisting of lemonade and ice cream, are borne by subscription. These hops take place nearly every Saturday evening, except during Lent. The officers also hold a series of ten dances, the midshipmen attending the ones of the series that are held on Saturdays. Curious slang has come into use relative to hops. If a midshipman has as his partner a girl who becomes successful and popular, he has "floated a *femme*." If he escorts to a hop a young lady living in the Yard, he is "dragging a yard engine"; if the young lady is a resident of Annapolis or "Crabtown," he is "dragging a crab."

Upon all national holidays work and study and drill are suspended, with the exception of attendance at mess-formation. At seven-thirty in the evening, however, the studies for the next day must begin. Little leave is granted during the year; only about forty-

eight hours to the two upper classes at Christmas. This short respite means more to a midshipman than do two weeks to the average collegian.

The fall and spring afford opportunities for tennis, and the twenty-three courts allotted the midshipmen are generally occupied whenever the weather and the condition of the clay courts permit.

The midshipmen have many friends among the families living in the Yard and in the town. Consequently there are many social breaks, such as dinners and teas and calls during the week ends, for all who care for such pleasures and the glimpses of home life.

The most mournful bugle-call ever invented from the viewpoint of the midshipman, is surely the "study call," which on every Sunday evening at 7.30, orders him to his room to "bone"; and thus, with a real anticlimax, abruptly end his pleasant moments of Saturday and Sunday.

The midshipmen have many activities outside their studies and perform them all

so well that the officers are amazed although they themselves have been through the same mill and have fulfilled the same requirements.

The weekly paper, *The Log*, the publication of which requires a large amount of work and late hours, fills a very important place in academic life by keeping the regiment in touch with the athletics, the studies, and the recreations of the Academy, producing gybes at the expense of the various academic happenings which serve to brighten the downhearted. Much of the regimental spirit and the backing of the athletic teams can be credited to this paper. Its volume and issue are known as Mark III., Mod. 12, etc., nomenclature following that of guns and torpedoes and mines. All classes are represented on its editorial staff. A characteristic editorial dated January 1, 1916, is here reprinted:

"Let's consider things. We lost to the Army in football and baseball. We lost our three crew races. In lacrosse, we did extremely well with a green team. In tennis and track team we held



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ARMY VS. NAVY FOOTBALL GAME IN FOG AT NEW YORK, NOV. 27, 1915. ARMY MAKING ITS FIRST TOUCHDOWN.







Photo by Armstrong

RACE BOAT HOUSES

ISHERWOOD HALL

TOWER OF MAHAN HALL

SAMPSON HALL

BASEBALL FIELD

WORDEN FIELD





our own. In the indoor sports, our gymnasium team went through its third year of unbroken defeats, our wrestling team kept a clean slate, and our swimming team took every meet by a good margin. And lastly, the only championship meet that we did receive—the Little Iron Man—to the uninitiated, the fencing championship trophy.

"Are you satisfied? If you are, turn in and think it over tomorrow. Next Saturday begins a new year, and make it a big year. These things won't come by merely wishing for them. You've got to get out and get busy. It is distinctly up to you."

The midshipman annual, *The Lucky Bag*, requires, for its editing and management, a large and capable literary staff. It is such a sizeable undertaking that work upon it must be begun during the second-class year. The first classmen in order to produce this annual are obliged to do an extraordinary amount of work aside from their studies. Those who are responsible for its publication have to give up many of the other pleasures afforded by athletics and hops. The book is an elaborate record of the graduating class,

including photographs of all members of the class, as well as personal remarks and characteristics that sometimes prove to be remarkably applicable even when in later years one turns to his *Lucky Bag* for reference.

"Where is our usual manager of mirth?
What revels are in hand? Is there no play,
To ease the anguish of a torturing hour?"
SHAKESPEARE.

Then there is the Masquerader organization that gives performances yearly of minstrels, farces, or operas, the first production early in February, the second in June Week. These plays are always well produced, a credit to any institution, especially so to the Naval Academy where practically no time can be filched from recitations or drills for pursuits of this kind. The dramatic performances were inaugurated by the very first class that entered the Academy. This class used the old theatre in Annapolis, the site of which is now occupied by the Presbyterian Church on Duke of Gloucester Street. The

first play thus presented to the public was Bulwer's *Lady of Lyons*. It is stated that it was played to crowded houses for two nights, the midshipmen being the recipients of unbounded applause.

The Midshipmen's Musical Clubs give a performance that cannot be excelled anywhere either for the vocal or instrumental portions of the program. An occasional hit at some department and its officers is given and taken in a harmless way that both midshipmen and officers enjoy.

During Monday afternoons and on some Saturday and Thursday evenings in Lent the band plays in Dahlgren Hall as an accompaniment to roller-skating, a sport to which many members of the Navy colony as well as the townspeople are devoted.

One entertainment, engineered entirely by midshipmen, that was very popular the past year and during the few years in which it has been presented, is the one called the Inter-Company Gymkhana, held in the gymnasium on a Saturday evening near

the end of January after the conclusion of the semi-annual examinations. The word seems to merit explanation as the majority of dictionaries omit it. It is from the Hindustani *gend-khana*, meaning ball house, the name given to a racquet court. Thus it became a place of public resort for athletic games and finally to mean an athletic sports' display. The first known use of this word was by Major Trotter in 1861. The make-ups for this gymkhana, which starts off with a grand march, comprise clowns, police, Mutt, Jeff, Happy Hooligan, Marcelline, Gloomy Gus, Jiggs, bull fighters, toreador, bandsmen, a menagerie, acrobats, sabre fighters, wrestlers, circus performers, flunkies, etc. The contests consist of an obstacle race, tug of war, rag chewing, push-ball, hockey, comic wrestling, pillow battle, human burden race, sabre battle, bull fight, chariot race, a breakfast formation race, etc., all the events requiring some little athletic skill as well as contributing to the pleasure of the evening. This gymkhana apparently the most spon-

taneous and extemporaneous affair given by the regiment, is certainly not the least enjoyable. Upon this occasion of merry-making mathematics and English are buried with great solemnity but with much delight by the second class, as these subjects have been completed at the semi-annual examinations. For the few who did not try their best and failed, with the penalty of a re-examination in May, this is decidedly not a joyous occasion. The details of this funeral service are carefully planned. A proper gown and mask is furnished the mock clergyman who reads a comic burial service; a firing squad composed of those who nearly bilged, chief mourners, pall- and body-bearers are all in evidence, as is the bugler who sounds taps after the firing squad have fired into, not *over*—lest the dread math and English might gain new life —the books representing the corpses of these subjects.

One of the curious Academy customs is that of baptizing the class rings. Second classmen purchase large gold seal class rings

in January, and gloat over them longingly in secret until entitled to wear them openly upon the completion of their annual examination in Navigation. That this event in Academic life be properly celebrated, a few first classmen lie in wait near the exit from the examination room, set upon the second classmen first to leave and promptly throw them over the sea-wall despite their struggles. The dripping second classmen, once on land again, take good care that none of their classmates escape the ducking, no matter how fast the latter may sprint upon leaving Maury Hall in a vain attempt to reach quarters without the involuntary bath.

Examinations over, the week of graduation, called June Week, is ushered in with the Reception of the Board of Visitors by the regiment on the forenoon of the last Monday in May. The smooth lawns with their fresh green grass and the handsome trees in their new foliage, together with the trim-looking buildings and other objects refreshed by the annual coat of new paint combine to

make the Academy look its best at this season. That the grounds are thus unusually attractive is due in a great measure to the presence of the parents and the many friends of those about to graduate as well as of those about to leave on the summer practice cruise. Daily military dress parades are held on Farragut Field, which, during the week, is also the scene of the company competitions in artillery and infantry. At the Monday's dress parade the presentation of awards for scholarship and athletics takes place. Excellence in scholarship on the part of the undergraduates is denoted by the star on the collars of their uniforms, and in the case of the graduates by the following prizes, awarded at this time and in this public manner. The awards consist of a sword and cup for Ordnance, a cup for Seamanship and International Law, a sextant for Navigation, and medals for expert rifle and pistol shots. The awards for athletics were enumerated in the preceding chapter.

Much interest and rivalry exist in the

various contests that compose the competition for the Regimental Flag, which takes place at the close of each academic year. There are contests in infantry and artillery drill, seamanship, small-arm target practice, sailing and rowing races; a stated number of points are assigned for each contest. The infantry and artillery drills for the assignment of points to the companies are held on two forenoons in June Week. The work of the companies is judged by three officers, the movements required consisting of both battalion and company movements. The battalion is exercised in close order and then goes through the function of dress parade, after which company exercises at manual of arms, extended order and street riot drills take place. Points are added up, and on Thursday of June Week the winning company marches to the front and centre, and the young lady chosen by the company commander to present the flag is escorted close to its line by the Superintendent of the Academy, the Secretary of the Navy often being

present, and little speeches are made while the colours are presented. The regiment cheers the winning company in the picturesque manner of seamen that inherit the old custom of "cheer ship," and the fortunate company cheers the young lady, after which the regulation dress parade is resumed.

The Masqueraders give two evening performances during the week. The play of 1916 was *Christopher, Jr.* The garden party given by the Superintendent to the graduating class, takes place in the grounds of his large and well-kept garden. The many coloured lights and decorations as well as the dresses and uniforms make this function a very attractive one. The german given by the first class is held in the gymnasium, which is converted into a fine dance hall for the occasion. A supper is served in the empty swimming pool, altered to resemble a sunken Italian garden. Informal hops also take place in Memorial Hall, and thus one cannot justly complain of the lack of employment or entertainment provided after

the completion of the examinations. The June Ball takes place on Friday evening, graduation exercises having occupied the morning, and, at this time, the president of the new first class receives with the wife of the Superintendent.

The morning of the next day, Saturday, is spent by the new first, second, and third classmen in carrying their belongings in white clothes bags from the large bare rooms of Bancroft Hall to the tug *Standish* and the motor launches of the ships of the practice squadron. After the noon meal, the last to be taken in Bancroft Hall by them for some four months, the midshipmen go aboard these craft and are transported to the Roads, there to board the waiting grey battleships for the three months' summer cruise involving work amid new scenes, life in cramped quarters, sleep in hammocks slung on the none too airy decks, and the acquisition of the much-advertised accompiishment known as the sea habit. At the conclusion of this cruise, the thirtieth of August, all are given

leave of absence for the entire month of September. On the thirtieth of that month at noon they report again at the Academy.

For the use of those midshipmen who live great distances from Annapolis or for any other reason cannot afford to take this leave, all the various facilities of the Academy for athletic sport and recreation are maintained open and available.

A leave spent at the Academy with quarters in Bancroft Hall, and opportunities for enjoying the boating, bathing, tennis, and golf provided in such large measure and at no expense to the midshipman, will be found thoroughly pleasant and will pass all too quickly. During the days of inclement weather the large library of Mahan Hall is open for the midshipman's use, wherein he may find plenty of light as well as the heavier professional literature. The latter type predominates and comprises well-chosen books on every part of a naval officer's profession. This library is always accessible to the midshipman and is used as much as his time

allows. The midshipman remaining in Annapolis may also spend a portion of his time in the wood-working shop, constructing any appliance that he may fancy. Aeroplanes, gliders, hulls of vessels, and the like, have thus been constructed. The Naval Academy, it is thus evident, offers as much in the way of recreation as it does in the way of study.

CHAPTER XII

THE PRACTICE CRUISES

"*The best protection against an enemy's fire, is a well-directed fire from your own guns.*"—FARRAGUT

OF late years the practice cruises have been made in three of the second-line battleships, each manned with a small enlisted crew and officered by the staff of the Academy. These three ships form the "Naval Academy Practice Squadron" under the command of the Superintendent. The Commandant of Midshipmen remains at the Academy and acts as Superintendent, supervising the carrying out of the regular course of instruction and drills given the fourth class, as recounted in a previous chapter. These vessels fall short of being the means of imparting true

seaman-like qualities and physical health. The latter defect is recognized and taken care of in the adoption of the system of compulsory physical training at the Academy, but the former remains uncorrected and the truth of the following statement becomes each year more evident:

"Sailing ships have been the recognized training school. The length of their voyages at sea compared with those of steamers, and the character of the work on board, give greater opportunity for the instruction of the sailor. Observation is sharpened, energy, endurance, and resource in times of emergency are all stimulated and strengthened."—LORD BRASSEY.

For even in these modern days of huge, fast battle cruisers and of small, speedy motor craft, there yet remains a plenty of places in which the seamanship that was taught by the hard life of the sailing craft is an absolute essential. Those who are working in the craft that compose the "fringes" of the great British fleet in this



U. S. S. " CONSTELLATION "



war, 1914–1916, can amply testify to this. The gunboats, mine layers, and destroyers of our own Navy require the ability of sailors as well as of seamen for the performance of daily duties.

The commencement and elaboration of the system of practice cruises that have been so beneficial to the course of training may justly be credited to Lieutenant T. T. Craven, who for eight years, 1850–1855 and 1858–1860, was Commandant of Midshipmen. For a short time during the first Summer practice cruise, 1851, the steamer *John Hancock* commanded by Lieutenant Craven, was used within the confines of Chesapeake Bay. The completing cruise of that summer was made in the sloop-of-war *Preble* off the coast of Maine. Since that time cruises have been undertaken every year with the exception of the year 1861, when the Academy was in the confused state attending its removal to Newport. The practice cruises during the Civil War were actual war-time cruises as the vessels were held "in the best possible

condition for action." In 1862, the *John Adams* and *Marion* searched for Confederate privateers. In 1863, the *Macedonian* proceeded to Plymouth, England, thence to the Bay of Biscay, and leaving Funchal, en route home, because of the uncertainty of the whereabouts of the Confederate privateer *Alabama*, the ship was disguised so well as to be taken on two occasions by those well skilled in such matters as anything but an American; the *Marion* searched for the Confederate privateer *Tacony* along the coast; and the *America* kept watch on the approaches to Long Island Sound.

In 1864, the year that marks the establishment of the first Naval Academy Practice Squadron, the *Macedonian*, *Marion*, *Marblehead*, and *America* searched for the Confederate privateer *Florida* off the Nantucket South Shoals and the North Atlantic coast.

Among the vessels used at various times were the *Plymouth*, *Savannah*, and *Dale*, while the *Constitution* as a station ship at the Academy from 1860 to 1871 was long asso-

ciated with the training of midshipmen in sea-going habits. The vessel that has really done the most service as a summer practice cruise ship is the famous *Constellation*, which first commissioned in 1798 for active service in the French War and rebuilt from 1844 to 1855, after an extremely busy and useful career as a man-of-war, came to the Naval Academy and took the midshipmen on every Summer cruise from that of 1871 to that of the summer of 1893. Since her passing, many different vessels have been used, several vessels being required after the Academy was increased in size by the act of July, 1902. As a result of this enlargement, cruises are now made in a squadron, thus reverting to a precedent set in the summer of 1864. The last time in which but a single vessel, the *Monongahela*, made the cruise, was the summer of 1900. As sail power died out, the need for steam vessels for practice ships was considered to exist, and the small gunboat *Bancroft*, now the coast guard schoolship *Itasca*, was built. In July, 1894, it took the

second class midshipmen to sea, the two other classes then being at sea upon the *Monongahela*. This inaugurated a change in the routine of the Naval Academy. Up to that summer the second classmen had always spent their whole summer at the Academy working in the machine shops. That summer term of machine-shop work has never been restored in the curriculum of the Academy. Strange to relate, almost as soon as a steam vessel was decided upon, a new sailing vessel was built, this modern one being of steel with exceptionally large and heavy spars, for use on the practice cruises. This was the *Chesapeake*, later renamed the *Severn*, which vessel with the *Newport* was first used during the summer of 1900.

The only change in the method of practice cruises came with the experiment in 1912 and 1913, when the midshipmen of the two upper classes, divided into squads of twenty-seven or thereabouts, were placed upon battleships of the Atlantic Fleet, these classes being distributed thus among fourteen to



THE U. S. S. *MISSOURI* IN THE CULEBRA CUT OF THE PANAMA CANAL, JULY 16, 1915



AT SEA IN FORMATION



seventeen vessels of that fleet. The third classmen in 1912, went by themselves on the *Massachusetts* for a coastwise cruise, and again, with sixteen first classmen as their leaders, on the *Illinois* in 1913 for a foreign cruise that included Antwerp, Vigo, Cadiz, Gibraltar, and Funchal. This method did not give the good results anticipated and was wisely abandoned before very extensive harm to the education and training of the midshipmen had been done.

The Naval Academy Practice Squadron as such has thus continued its beneficial influence upon the formation of the character and training of the Navy's line officers since 1903, with the exception only of two years, 1912 and 1913. For the summer of 1916 the same vessels that made the cruise in 1915 through the Panama Canal and to the Expositions at San Francisco and San Diego are to be used, namely, the battleships *Missouri*, *Ohio*, and *Wisconsin*. These three represent ships of about the same era, the best when built—1901–1903—but now rele-

gated to a second-line place in the fleet and habitually kept in reserve, none of the three having been regularly in the active battle fleet since 1912. The normal displacement of the first two vessels is 12,500 tons, of the latter 11,552 tons. The first two are 388 feet long, 72 feet 2½ inches beam, drawing 23 feet 11 inches of water, speed 18.15 knots, with batteries of four 12"–40 guns, sixteen 6"–50 guns, six 3"–50 guns, and two 18" submerged tubes. The water-line belt of armour is 11 inches, the turrets 12 inches. The *Wisconsin* is but little different, although of a little older type having been commissioned two years ten months before the others. Her battery consists of four 13"–35 guns, fourteen 6"–40 guns, and four 3"–50 guns with armour belt of 16½ inches, turrets of 15 inches.

The ships are sufficiently modern to give the midshipmen a correct impression of the complicated mechanism of a modern battleship, how a ship is organized and administered, as well as to teach them seamanship, naviga-

tion, gunnery, marine and electrical engineering. The midshipmen classes are divided, one third of the members going on board each vessel, making a total on each vessel of about 220. Aboard ship the first classmen immediately begin as understudies of the commissioned officers, and all classes take up the general turret and gun division duties with seaman lookouts and details in watch standing and in boats, together with duties in the engine room, fire rooms, dynamo rooms, and the radio operating.

Prior to leaving Bancroft Hall the midshipman has found on the bulletin board his watch number, and has been given a pamphlet of directions as to what to do immediately upon reporting aboard his ship. The directions include his locker number, its location, his mess, where to stow his clothes-bag and dress-suit case, his assignment to a division and his first week's detail for the performance of his part of the life of the battleships, and, in general, the regulations and routine of the vessel. The classes

are divided equally into four divisions, three for deck duty and one for engine-room duty. One fourth of the time of the cruise is thus spent in the engine room, the divisions taking this duty in rotation.

In the case of the upper classman who is in a similar relation to the "youngster" as were the "oldsters" of the early Academy days, life on board the ship soon settles down to a routine to which he quickly accustoms himself by virtue of his previous practice cruise or cruises. To the new "youngster," however, the daily order of things is decidedly novel and to become acquainted with it is not easy. Then too the latter is filled with forebodings as to how he will stand the sea, will the *mal de mer* be too much for him or not? With drills, meals, night watches, day's routine, and studies he is kept busy. Not the least of his troubles is learning to keep himself and his clothes in cleanliness and good trim in the face of many difficulties. This ability is one of the things that a marine acquires tending to make him more adapt-



SCRUBBING DECKS AND AIRING BEDDING



RANGE-FINDER DRILL

LIFE ON THE PRACTICE CRUISE



able to peculiar conditions or surroundings than is the ordinary soldier. Scrubbing clothes with a "ki yi" and salt water soap upon a wet forecastle is not the easiest of tasks. Then to get a restful sleep of a night in a hammock, when that night, as a rule, is composed of not more than seven hours, broken by a four-hour watch of some sort, is not as easy as it might be.

The keeping of his bedding dry, aired, and clean is taught by inspections and by the airing of bedding; that is bringing hammocks on deck, opening out blankets, mattress-covers and mattresses and throwing the whole across the ridge-ropes and life-lines to dry in the wind and sun. This is invariably done once or twice a week as the weather may permit.

Rainy nights on lookout with the salt spray everywhere, the ship plunging into the dark seas that tumble over the forecastle, then rising again with the water pouring from her sides, surely give the lonely and wet midshipman a feeling of respect for the

ocean and one of responsibility in his profession. Lucky it is for him that the salt spray tumbling aboard does not freeze and that the wind is not so cold that it cuts like a knife. These things are reserved for the future. The midshipman on lookout during a night of dirty weather, when sea-sick and wet to the skin, perhaps envies his West Point comrade, who at this time is enjoying the summer camp with its many social attractions, where one of the main objects in cadet life is to get into a pair of highly starched white duck trousers without creasing them. However, if he really likes the sea, he will agree with the old sailor who describes his feelings thus:

"A strong nor'wester's blowing, Bill!
Hark! don't ye hear it roar now?
Lord help 'em, how I pities them
Unhappy folks on shore now!"—PITT.

In the morning when he is dry, and the ship is steaming through blue waters, the sun shining upon all, his spirits rise, so that



THE BRIDGE



SHOOTING THE SUN IN THE EARLY MORNING

LIFE ON THE PRACTICE CRUISE



now he feels proud of his profession, glad to be upon his powerful battleship that is built as a part of the fleet that must command the sea in war, happy that he is acquiring the sea habit, and quite ready to sing:

"I'm on the sea! I'm on the sea!
I am where I would ever be,
With the blue above and the blue below,
And silence wheresoe'er I go."

PROCTOR.

Some romance of the sea still attaches to the grey battleship, though it is very slight as compared to that given by cruises in sailing vessels where one really learns to know the sea and its life, and feels the charm that is in all its moods from the wonderful moonlight nights in a passage in the "trades," to the dark and stormy ones of the "roaring forties."

"A wet sheet and a flowing sea,
A wind that follows fast,
And fills the white and rustling sail,
And bends the gallant mast."

CUNNINGHAM.

As Rear Admiral Luce has expressed it:

"Steamers produce seamen, it is true—men who acquire the sea habit—but not sailors in the strict sense of the word, men who do not only have the sea habit but the well-known characteristics of the sailor, his skill in meeting all the vicissitudes of life at sea, his contempt for danger, his self-reliance under difficulties, his adaptability to all sorts and conditions of circumstances. Men seasoned in that school soon adapt themselves to man-of-war life."

The routine to which the midshipman was subject during his "plebe" summer and his four academic years having been given, the shipboard routine deserves specification. Underway at sea the day begins at fifteen minutes before midnight with the long shrill whistle of the pipes of the boatswain's mates and their long drawling cry intended to rouse the sleepers, "All the starboard watch"; followed in ten minutes by "Relieve the wheel and lookouts." At midnight the watch is mustered, and there are to be found at the various stations alert midshipmen, intent upon their duty no matter what the

weather and despite their recent rude awakening from the joys of sleep in a hammock. Looking at these posts, there will be found first classmen as the officers of the deck, the junior officers of the deck, the petty officers of the watch, the quartermaster, and the coxswain of the lifeboat; while below in the radio room receiving and sending messages is yet another first classman; second classmen on the bridge as signalman, at the wheel as steersman, on the lower decks as corporal of the guard; and third classmen at the wings of the bridge as lookouts, by the life buoys, and as orderly to the captain. After the watch is mustered, the men composing it will spend the time until four grouped in certain parts of the ship and within easy call, the lookouts and details as given above being relieved at two A.M.

A new watch comes on similarly at four A.M. This watch "turns to" at five A.M., and after coffee washes down the deck and scrubs paintwork. At sunrise the running lights are turned off, the speed cones are

yardarmed, the breakdown flag run up, the bridge lookouts called in, and a new watch of midshipmen, the steering engine-room watch, is set. Then at 7 A.M., or six bells, "all hammocks" is called, which means that within ten minutes every hammock must be lashed and stowed away in its netting. Then takes place a scramble for a hasty toilet under considerable difficulty, due to the necessary inconveniences of ship life. Breakfast comes at 7.30. All meals are served exactly as they are to enlisted men of the battleships, being hearty and strengthgiving, though plain.

Before the breakfast and up to nine the first classmen will be busy "shooting the sun," and scurrying about for their C minus W's;[1] and the other data necessary to work out their sights, the rough log being consulted and the almanac searched.

Quarters for muster and inspection at 9.15 A.M., is followed by physical drill, according to the Swedish system of calisthenics.

[1] Chronometer time minus watch time.



SCRUBBING CLOTHES AFTER COALING

COALING SHIP

LANDING PARTY LEAVING FOR A SHORE PARADE, U. S. S. *WISCONSIN*



Drill at the battle stations follows and all instruments used in connection with the battery are tested out under power. The midshipmen here acquire the rudiments of plotting and tracking a possible enemy, how to determine ranges, and how to control the sight-setting and pointing of the battery to the end that no shots will miss their target.

The midshipmen engineer division daily spends from 8.15 to 11.15 A.M. and from 1.15 to 4 P.M. at various instruction details that include the important auxiliary machinery as well as the propelling installation of the battleship, and the electrical plant with its multitudinous appliances and uses in every compartment of the vessel. The fire room is given as close attention as is the engine room.

The deck divisions receive painstaking drill in loading and pointing the guns of battery. When expertness in these two duties is acquired, speed is taught. The sight-setters find their duty by no means so simple as they had supposed. The range-finder crews are

drilled constantly. The fire-control party, upon which the whole success of the target practice that is usually held at the end of the cruise may depend, works persistently at its somewhat tame but exacting duties.

Shortly before noon the first classmen are again in evidence on deck in a struggle for the sights of the sun that are necessary in their navigation work and then at noon all take dinner. The morning instruction period has continued until 11.15, and that of the afternoon will continue from 1.15 to 4.

On deck the midshipmen signalmen get constant exercise in all kinds of flag and semaphore signalling. The midshipmen officers of the deck are busy always with the stadimeter and, in the endeavour to maintain proper distance from the next ship ahead, sometimes are decidedly too busy with the engine telegraphs—but then this is what the cruise is for, to learn by experience. The midshipmen must carry out the routine of the ship under the watchful eye of their tutor, the commissioned officer of the watch,

who is actually responsible for all and is always at hand to assist the midshipmen in surmounting the difficulties that come to them in handling the ship or the men.

The night watch standing is reduced to a minimum in order that the midshipmen may not be too tired to absorb the instruction and to study the lessons of the day. As these lessons take place morning and afternoon, there is not much time during the day for sleeping or "caulking off." After four in the afternoon an hour is generally consumed in the scrubbing of clothes.

The cruises are divided as nearly as may be to allow one half the time under way at sea and the other half at anchor in port. When at anchor the routine varies considerably with the omission of the large number of duties known as the sea details. The duty of the ship is assumed by one division at a time for a period of twenty-four hours. This arrangement requires the presence on board of one quarter of the midshipmen at all times.

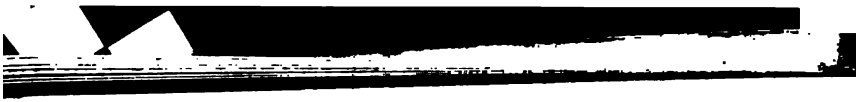
One important but most disagreeable task falls to the lot of the midshipmen soon after the arrival of their squadron in port. This is the filling of the ship's bunkers with coal, —a most necessary but difficult, laborious, and unspeakably dirty occupation. In coaling speed records are striven for between the ships and between the divisions on the ships, which practice, by imparting an interest in the job, hastens the completion of the coaling decidedly. Then comes the cleaning of the ship and the scrubbing of one's clothes. Coal dust mixed with water and sand are everywhere for a space of about four hours, after which the ship from an apparently ineradicable state of confusion and dirt emerges as orderly and as spotless as the Navy's men-o'-war habitually are.

On shore the midshipmen find plenty to amuse and interest, be the port what it may. If there is no sociable life available, the baseball teams will organize and play ashore, and the race boat's crews will get down to real hard work in the effort to win the cup



U. S. S. "MISSOURI"
FLAGSHIP

...QUARTERS ... SAN DIEGO, CALIFORNIA, JULY 28-30, 1915



that is competed for annually by the midshipmen from the three ships. This cup is called the Lysistrata Cup, having been presented by Mr. James Gordon Bennett, the owner of the steam yacht of that name. In 1915, the race for this cup took place in the harbour of San Diego and was won by the U. S. S. *Wisconsin*. Constant preparation for target practice is carried on, and the regulation requirements of the target practice office of the Department are followed, with the result that a creditable showing is generally made in the practice that takes place in the last two weeks of the cruise.

The midshipman spends the latter part of his summer cruise in planning for that one month's leave in which he must have enough unhampered freedom and pleasure to last him through the next academic year. The vessels generally land the midshipmen in Annapolis during the last week in August, which time seems to approach more and yet more slowly as the cruise draws to an end.

Thus the midshipman of the present has

none of the school of the masts and sails—save the small boat handling; yet we believe that he will prove as capable as any of the country's former blue-water sailors when the time comes for the proof. As Rear Admiral Cradock expressed it: "The main sheet, though in different form, still drives the nation's ships to windward."

CHAPTER XIII

THE POSTGRADUATE

"*Knowledge is more than equivalent to force.*"—JOHNSON.

POSTGRADUATE work may be stated to have been begun through the energy and perseverance of one graduate, Cadet Engineer F. T. Bowles, who, in 1881, after many discouragements, obtained permission for himself and a classmate, Richard Gatewood, to take a course in naval architecture at the Royal Naval College at Greenwich, England. These officers were nominally attached to the *Trenton*, but were given indefinite leave therefrom. Their course consumed two years, at the expiration of which period they were appointed assistant naval constructors and, as is the way of the world, they, being

the beginners of new ideas and customs, were then received unwillingly into that corps by its older officers. Thereafter two or more graduates each year pursued a similar postgraduate course at Greenwich, Glasgow, or Paris. From October, 1897, to March, 1899, this plan was temporarily interrupted by a half-hearted attempt to carry out a postgraduate course of two years at the Academy, then was resumed and continued until the present method of postgraduate courses for the several corps of the service came into operation. Ensigns for the construction corps, beginning in February, 1913, were returned from sea to the Naval Academy postgraduate school, and after six months of study there were sent to the Massachusetts Institute of Technology for a course covering from two to three years.

The special course of one year, the fourth at the Academy, given to naval cadets for the engineer corps in marine engineering specialization, begun in September, 1889, was abandoned in June, 1899, because of

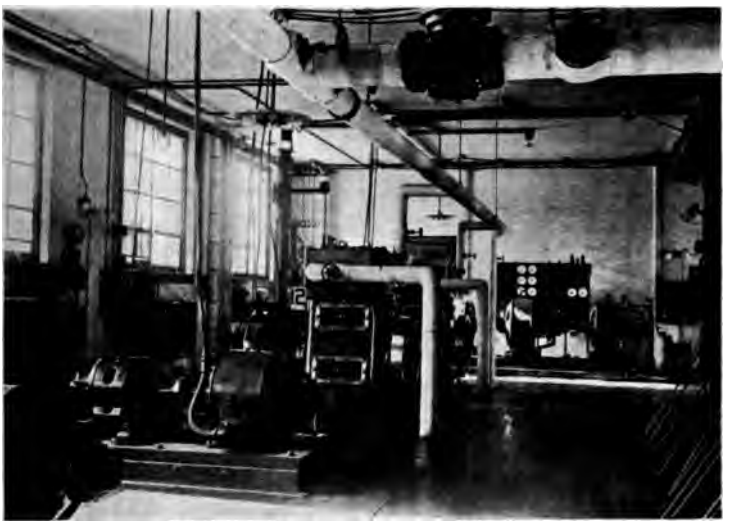
the amalgamation of the line and engineer corps. Soon the necessity for higher education and specialization in marine engineering, ordnance, and electricity became too apparent to be longer deferred, and in December, 1904, the postgraduate system of schooling was applied to officers for ordnance by the selection of four for special study under the general direction of the Bureau of Ordnance. This idea was taken up by the Bureau of Steam Engineering with the appointment of eleven officers who were to begin work in January, 1906. This plan of training officers in engineering and ordnance was continued for a few years.

As the results of the unsystematized education failed to meet expectations, the School of Marine Engineering was established at the Naval Academy, June 9, 1909, with classes consisting of ten officers for marine engineers and a course that extended over two years. Commencing June, 1913, the second year for the engineering students was taken at Columbia University.

In November, 1912, the ordnance students came to this school at Annapolis for a course of four months, and, in February, 1913, came the naval constructors.

The Navy Aviation Corps also owes much of its early training and organization to Annapolis, which was its headquarters during the years 1911, 1912, and 1913. Its hangars were for a time located just inside Greenbury Point. It was found, however, that stray bullets from the rifle range rendered this position unsuitable and the hangars were removed to a point near the Engineering Experimental Station. During these years the sight of seaplanes and the sound of the whir of their noisy propellers were common to Annapolis, where now only news items and pictures remind the midshipmen of this important branch of their profession.

Thus the present curriculum and the methods pursued in postgraduate courses in the Navy may be said truly to have actually commenced in the summer of 1913. The specialized experts in the Navy, men who



A CORNER OF THE ELECTRICAL LABORATORY



White Studio

THE MACHINE SHOP



are seagoing and yet both practical and theoretical experts in ordnance, marine, and electrical engineering, and naval construction, and who are capable of design work and development of all mechanisms, are being developed by this Postgraduate School now firmly established at the Academy. An officer after a course in this school becomes a specialist when on a shore detail and an all-round officer when at sea. His sea experience enables him to know what is wanted, his special education qualifies him, when next on shore, to produce the gear, design, or what not required by the seaman. Hence these graduates are our most valuable officers, and, having had this special opportunity, they feel an obligation to prove worthy of the education that has been given them.

A recent example of the advantage of having such specialists at sea was furnished in September, 1915, when a superdreadnought, by reason of the bursting of the casing of the steam turbine that drove her main circulating pump, would, in all likeli-

hood, have been obliged to leave the fleet for repairs, had it not been for a postgraduate engineer student on board, who, by a scientific calculation of the motor characteristics, of the various motors on board, was enabled to select and doctor up one wherewith to drive the pump and did his task so successfully that the vessel operated at full power during war manœuvres and was not required to undergo further repair until a month later when she proceeded to dockyard for her routine overhaul.

The years at sea implant in the young officer's heart the ambition to learn and he comes to his work full of enthusiasm and interest. Indeed these young officers, all specially selected, find study a pleasure and not the necessary evil it was considered when they were undergraduates, its only use in their mind then being that it enabled them to pass the examinations. Mathematics are dry, hard, and intangible to the young midshipmen who, to use the words of one young officer, even at times, believe the

subject to be only a cunningly devised scheme of mental torture. In the Postgraduate School, however, the application of mathematics to everyday science becomes apparent, and the student realizes that without mathematics he can never do exact work of any kind in this world. However, the experience of several years at sea in the fleet has caused an entire change of his viewpoint, and the value to him of engineering knowledge is appreciated in its true proportion. He finds that the undergraduate training has of necessity been insufficient, and he must look to a postgraduate course to supply this deficiency. The scope of the engineering field with which the graduate midshipman must have some familiarity is so extensive that the undergraduate course, as has been explained, is necessarily largely descriptive in its nature and time is not available for much fundamental theory.

The technical duties in the various phases of naval engineering for which postgraduate education is required, may be tabulated as follows:

HULL ENGINEERING (Naval Construction)

The designing, building, fitting, and repairing of hulls of ships, capstans, windlasses, steering gear, and ventilating apparatus; the designing, construction, and installation of certain ammunition hoists, the placing and securing of armour; the designing and installation of supports for everything attached to the hull of the ship, including armament and propelling machinery; electric machinery for turret turning, boat cranes, deck winches; the docking of ships.

ORDNANCE ENGINEERING

The designing, manufacture, purchasing, and inspecting of guns and gun mounts; ammunition hoists, rammers, gun sights and telescopes, periscopes, and other optical instruments; smokeless powder, gun cotton, and other high explosives; torpedo tubes, torpedoes and mines, air compressors, armour, projectiles, small arms and infantry equipments, fire control apparatus; the management of the Naval Gun Factory, the Naval

Proving Ground, the Naval Smokeless Powder Factory, the Torpedo Stations, and various naval magazines.

ELECTRICAL ENGINEERING

At sea. As electrical officers on shipboard, the operation and maintenance of all electric machinery, from the switchboard.

On shore. The designing, purchasing, and inspecting of all electric machinery and appliances except turret turning motors, ammunition hoist motors, boat cranes, and deck winches.

RADIO ENGINEERING

At sea. As a radio officer on staffs of commanders-in-chiefs, Squadron and Flotilla commanders; development and control of radio communication and maintenance of apparatus.

On shore. Designing, inspecting, fitting, and repairing of radio installations. The administration of the Naval Radio Service.

MARINE ENGINEERING

At sea. As chief engineers or assistant engineers; the operating, maintenance, and repair of motive and auxiliary machinery.

On shore. The designing, building, purchase, inspecting, and repairing of propelling machinery, boilers, engines, pumps, distilling apparatus, refrigerating apparatus, dynamo engines. The management of the Engineering Experiment Station and of the Fuel Oil Testing Plant.

CIVIL ENGINEERING

The designing and constructing of buildings and their permanent fixtures at Navy Yards and Naval Stations, harbour works, waterfront improvements, graving docks, and floating docks, power plants, roads, streets, tracks, hoisting appliances, cranes, derricks, transportation equipment, steam shovels, dredges, and pile drivers, fire apparatus.

During the period of the development of the postgraduate idea in the Navy, 1881

for the construction corps, 1904–1906 for the other specialized corps, there was much discussion and conflict of opinions as to the proper site for the home of the new department of postgraduate education. The best service opinion deems the present location at the Naval Academy to be the wisest one. It is important to maintain the early part of the course under the direct control of naval officers, who are thus permitted to observe the students closely and determine their fitness for the work and thoroughly to instill in them an appreciation of responsibility as regards their future work at the colleges and in the naval service. The Naval Academy furnishes well-equipped engineering and chemical laboratories and there is located close at hand the Engineering Experimental Station of the Navy, and above all, come the strengthening of the service spirit and the valuable influence and aid of the Academic Staff. The facilities of the Naval Academy for the preservation of the physical health of the students are also important considera-

tions. The addition of the postgraduate department benefits the Naval Academy as an educational institution, the function thus entrusted to it lending dignity and elevating its plane. The service spirit is strengthened by the unity of interest resulting from the fact that the undergraduates and the postgraduates are studying at the same institution. The presence of these postgraduate students incites the midshipman to harder work, and the student officers feel that they must set a good example. Young officers among familiar surroundings will pick up the habit of study more quickly than they possibly could in a place with no familiar landmarks.

The administration of the school is examined and approved from time to time by a council composed of the Superintendent of the Naval Academy, the Head of the Experimental Station, the Heads of the academic departments of Ordnance and Gunnery, Electrical Engineering and Physics, Marine Engineering and Naval Construction, Mathematics together with a naval constructor,



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MEASURING SHAFT HORSE-POWER BY TORSION METER AND PRONY BRAKE. SHAFT DRIVEN BY CURTIS TURBINE



THE FORGE SHOP



a civil engineer, and the Head of the Postgraduate Department. The latter is at present Lieutenant Commander John Halligan, jr., an officer of recognized ability along engineering educational lines, whose service in the Navy has been of a character especially to fit him for the position he occupies. This chapter is based largely upon a recent article by him descriptive of the work of the school.

The teaching staff of this school consists of three civilian professors and three instructors all under the guidance of this naval officer, who understands what the service requires and is thus able intelligently to direct the courses. The services of many naval officers on duty in the undergraduate department of the Academy as instructors are also utilized to fill out the courses. The staff is wholly composed of experts in their line, of trained instructors familiar and in close touch with industrial conditions and modern engineering practice, the field of which is widening so rapidly these days.

Much instruction is given by lectures,

and much by practical work in the laboratories. The forenoons in general are devoted to lectures or recitations; the afternoons, on the other hand, are devoted to drafting-room or laboratory work, the division of time between theory and practice being about even. There are scheduled about fifty-five hours per week to be devoted to work in the laboratory, lectures, and preparation. Fifteen hours of preparation at home are required, and an endeavour is made to hold the students to that amount, but the record turned in by the students shows an average of over twenty hours.

Compulsory physical exercise is scheduled for three periods per week, which come just before luncheon. Fifteen minutes of this time is spent in Swedish movements, this being followed by forty-five minutes of handball during the indoor season and of tennis when weather and the condition of the courts permit. This maintains the physical health secured during the academic years and gives the student officers instruction in a form of exercise that is available in most parts of the

world where vessels of the Navy may call in their cruising duties.

The officers who are to take this course are selected carefully by the officers of the three bureaus concerned; namely, Ordnance, Construction and Repair, and Steam Engineering. Their semi-annual reports of fitness, their reputation among their fellow officers, the estimate of their seniors with whom they are serving, their scholastic merit as shown in the four years at the Naval Academy, and their own requests form the basis from which the selections are made.

The tabulated data which follow, give a clear idea of the size of the school at present and the method of carrying on the courses, as well as indicating the whereabouts of the students in January, 1916:

AT ANNAPOLIS

Marine Engineers	16
Electrical Engineers	4
Radio Engineer	1
Ordnance Officers	5
Naval Constructors	5
Total	31

AT COLUMBIA UNIVERSITY

Marine Engineers (Design)	7
Marine Engineers (Shop Practices)	2
Electrical Engineers	10
Metallographist	1

AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Naval Constructors	13

AT RENSSELAER POLYTECHNIC INSTITUTE

Civil Engineers	3

AT STEEL PLANTS, NAVAL GUN FACTORY, PROVING GROUND

Ordnance Engineers	9

The allotment of time under instruction indicates what an opportunity the young officer who is so fortunate as to be one of these selected few, obtains in the comprehensive view of the whole naval profession that is thus given him (see opposite page).

The need for postgraduates, *i. e.*, officers who are specially educated along a certain line in their profession, is thus being gradually met as far as the service demands for officers ashore and afloat will permit. The

Courses	At Annapolis	Subsequent Training
Naval Construction	7 mos. Feb. to Sept.	2 years at Mass. Ins. of Tech. leading to degree of M.S.
Ordnance	4 mos. Oct. to Feb.	6 mos. Naval Proving Ground 4 mos. Steel Plant 4 mos. Naval Gun Factory 1 mo. Bausch and Lomb, Rochester, N. Y. I mo. Sperry Gyroscope Co., Brooklyn, N. Y. 4 mos. additional specializing at one of the foregoing
Electrical Radio Marine Engineering	1 year	1 yr. Columbia University leading to degree of S.B. Summer of 2 years at Navy Yard, N. Y. Schenectady, N. Y. Sperry Gyro Co., etc.
Civil Engineering	1 year	2 years at Rensselaer Polytechnic Institute leading to degree of C.E. Summer work under direction of Bureau of Y. and D.



school can handle a much larger number than it has at present, but for some years until the shortage of officers is gradually made up it is probable that the school will retain about its present proportions.

Recently, 1916, an inspection of the curriculum, of the laboratory appliances, of the methods of teaching and of the underlying principles governing the school was made by a board of expert civilian educators. They approved in most commendatory terms the school and its methods. As one result of their work the hope has been kindled that a special building will be erected in the Naval Academy as the home of the school. The present building is ill adapted to the purpose, and will almost certainly be requisitioned for the needs of the undergraduate body, which body, on account of the recent increases in the number of midshipmen, will require the use of the present quarters of the school.

In marine engineering alone the Navy requires, according to the estimate of the Bureau made in January, 1916, for its thor-

oughly efficient operation two hundred and twenty-three *postgraduates*. This is, of course, the ideal situation. There are at present fifty-six postgraduates of engineering in the service. As a result the vessels of the fleet are being run at reduced efficiency without the proper number of experts. It is believed that the officer who completes the course given in this school receives the most complete engineering education that is available in the present day. The gain to the naval service is great, and already many problems in the science of engineering afloat and of ordnance and of naval construction have been successfully solved by the graduates of this school.

CHAPTER XIV

GROUNDS AND BUILDINGS

'Its stately halls of learning,
How impressively they stand,
Amid its tall ancestral trees,
O'er all the pleasant land."

THE army post at Fort Severn, as transferred to the Navy, in 1845, comprised an area of 9¾ acres. The War Department had acquired the property from the Dulaney family in 1808. The fort was a small circular rampart built in 1809 upon Windmill Point, the easternmost extremity of Annapolis, on the site of the stone windmill that had been erected there in 1760. The walls were about fourteen feet high and enclosed a space about one hundred feet in diameter. The battery consisted of four 24-pounders, six 12-pounders, and two 6-pounders. This

fort, as time passed, lost its character as a fortification; its guns were removed; a second story and a roof of wood were added; finally, in Admiral Porter's administration about 1868, it became the gymnasium of the Academy, in which capacity it served until the present gymnasium was completed. Subsequently it was merely a landmark of the early struggles of the Academy for existence and even this significance was denied it when in 1909 it was totally demolished. An inscription on a stone block, set into the present Cooper Road, and a bronze tablet, set in the corner of the gymnasium, are the only reminders of the existence of the fort, which had stood for one hundred years and which had in turn served as an army fort, a battery for great-gun training of midshipmen, and a gymnasium that contained a bowling alley and a swimming tank.

By 1861, the time of the removal of the Academy to Newport, the grounds had been enlarged through two purchases, one made in 1847, and the other in 1853, with the result

that the acreage had increased to 26¾ acres. Since the return of the Academy, in 1865, purchases of additional territory and the reclaiming of land from the river and harbour fronts have steadily continued. At present, 1916, the Naval Academy proper, as bordered by Dorsey Creek, Severn River, the harbour, and city of Annapolis, comprise 111.05 acres of which 44.7 acres are reclaimed lands, the largest portion being the 17 acres that form the greater part of Farragut Field.

Across Dorsey Creek to the north-west of the Academy lie 113.19 acres, which property was purchased in two large lots. The first, that bought in 1868, was known as the Strawberry Hill purchase. Upon this are now located the cemetery, the U. S. Naval Hospital, and part of the present golf course. The second, that bought in 1869, called the Prospect Hill purchase, includes the remainder of the golf course, the marine corps reservation, and the superintendent's garden. These two pieces of land are commonly known as the "Government Farm."



ANNAPOLIS FROM THE HARBOR

Across the Severn in a general north-easterly direction are located the Experiment Station, the buoy station, the rifle ranges comprising 176.5 acres, and the farm on Greenbury Point of 180 additional acres. The land occupied by the Naval Academy cost $373,630.79, and that in the Government Farm cost $34,218.75.

The buildings of the Academy are all comparatively modern structures, the oldest being the officers' quarters of brick in Upshur Row, built from 1893 to 1898. The territory upon which they are located is known colloquially as Oklahoma because, as these quarters, when built, were the best and most modern in the yard, there was, when they were opened, a rush for them, recalling the stampede for desirable sites in Oklahoma. The remainder of the present Academy was commenced in 1899. The various buildings of the Academy at that date comprised architecture "of all patterns from a Greek temple to a modern factory, from an early colonial mansion to a later-day assemblage

of flats,"[1] and were most of them in an unsafe and unsanitary condition, being so reported by consecutive Boards of Visitors for many years.

Governor Sayres of Texas, chairman of the House Committee on Appropriations, and Colonel R. M. Thompson, a civilian of years' standing but once a member of the class of 1868, were members of the Board of Visitors of 1895, which made a very strong report insisting that something be done to relieve the urgency for proper buildings. After stating that the Board considered that the Naval Academy ought to be an institution second to none in the world, one that would meet every modern educational requirement and afford every convenience and accommodation to officers, instructors, and cadets, and after characterizing the insufficiency of the present buildings in strong terms, the report concluded "a reconstruction of buildings, grounds, and sanitation,

[1] Park Benjamin in *The United States Naval Academy*, p. 408.

upon the most approved modern architectural and sanitary lines will not only be an incalculable benefit to the naval service, but a progressive step which will meet the approval of the whole country."

Through the energy of Colonel Thompson this report was not permitted to be pigeonholed, and Secretary Herbert appointed a board of survey to examine into the Academy's needs and to devise methods to meet them. This board was known as the Matthews' Board, its chairman being Commodore E. O. Matthews. Captain P. H. Cooper was a most prominent working member thereof and an advocate of an entire new Naval Academy. In the report of the Board were embodied the plans of Mr. Ernest Flagg, an architect of New York. Much importance was placed upon the necessity of reclaiming land from the water-front and in preparing the ground for the erection of new buildings. "The extensive flats that surrounded the water-front exposed or close to the surface at low water rendered

the providing of a proper sewerage system practically impossible. The new buildings ought to be substantial fire-proof buildings of indestructible material so situated and arranged as to be convenient, healthful, and thoroughly adapted to the requirements of an institution that is to last for all time." This was in January, 1896.

Matters drifted for two years longer, to be specific, until the recitation hall was found to be unsafe. Then Congress, 1898–1899, was asked to make the appropriation necessary to commence the work in accordance with the "Matthew's plan," and one million dollars were obtained to be applied toward the erection of the boat-house (the present gymnasium and seamanship building), the armory, the power-house, and a part of the sea-wall. The additional money expended in the carrying out of the plan was obtained in small appropriations made from year to year. Once begun, the construction of buildings progressed without interruption. The Spanish-American War

had popularized the Navy so that appropriations in large amounts were granted by Congress for the erection of buildings. Later however, after the three first buildings, Dahlgren, Bancroft, and Luce Hall, were completed of granite and limestone, insufficient money was appropriated, and the remaining buildings of the new Academy had, in consequence, to be built of grey enamelled brick, terra-cotta, and plaster. As a result they appear somewhat out of keeping with the earlier, more solid and substantial buildings.

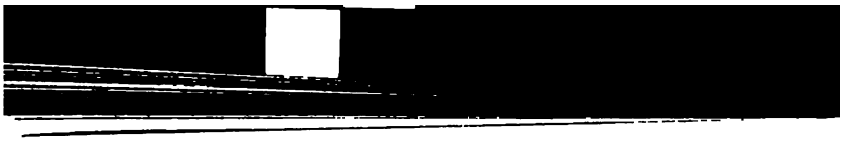
Work on the construction of the present Naval Academy was commenced on March 28, 1899, and was continued with more or less activity until 1913, when, with the laying of the unsightly telegraph, telephone, lighting and power lines underground, together with the building of Dorsey Creek concrete bridge, the Academy may really be considered to have been completed. The construction work thus occupied about eleven years, and the cost has been $8,019,000 for

the buildings, and $446,000 for quay walls and wharves. The position of the buildings, as well as the names that have been given them in order to perpetuate the names of notable workers of the service, are well indicated on the map of the Academy appended to this book. The plan has been to group the buildings in such a way as to facilitate their use by midshipmen. The connecting by covered ways of Bancroft Hall, the quarters, to the gymnasium and armory, in which two buildings all the indoor recreation and sports are held, places these buildings within easy access of the midshipmen and allows the maximum amount of time for recreation, the distance required to be covered in order to shift clothes being reduced to the minimum.

The midshipmen's quarters known as Bancroft Hall is a five-story granite building arranged around three courts—two inner, which serve as light-shafts to the inside rooms of midshipmen, and one outer, which serves as an esplanade before the main



BANCROFT HALL AT NIGHT



entrance. The building measures 773 feet in extreme length and 458 feet in breadth. The total cost was $3,513,855. When the building was designed the total strength of the regiment was estimated at about 480 midshipmen. However, the regiment has increased in numbers until it had an enrollment of 918 at the beginning of the academic year 1915–1916, and the probable number for the fall of 1916 is 1250. This increase in numbers above that for which the quarters were designed naturally has caused many complications, not the least of which was the change in the location of the mess hall from the space designed, now officially called Recreation Hall but unofficially "Smoke Hall," to a space ill suited for the purpose under the terrace and almost on a level with the water. The rotunda of Bancroft Hall is the most pleasing architectural interior effect in the Academy, the walls being high and ornamental, the floor laid in different coloured marbles. A handsome stairway leads to Memorial Hall from the

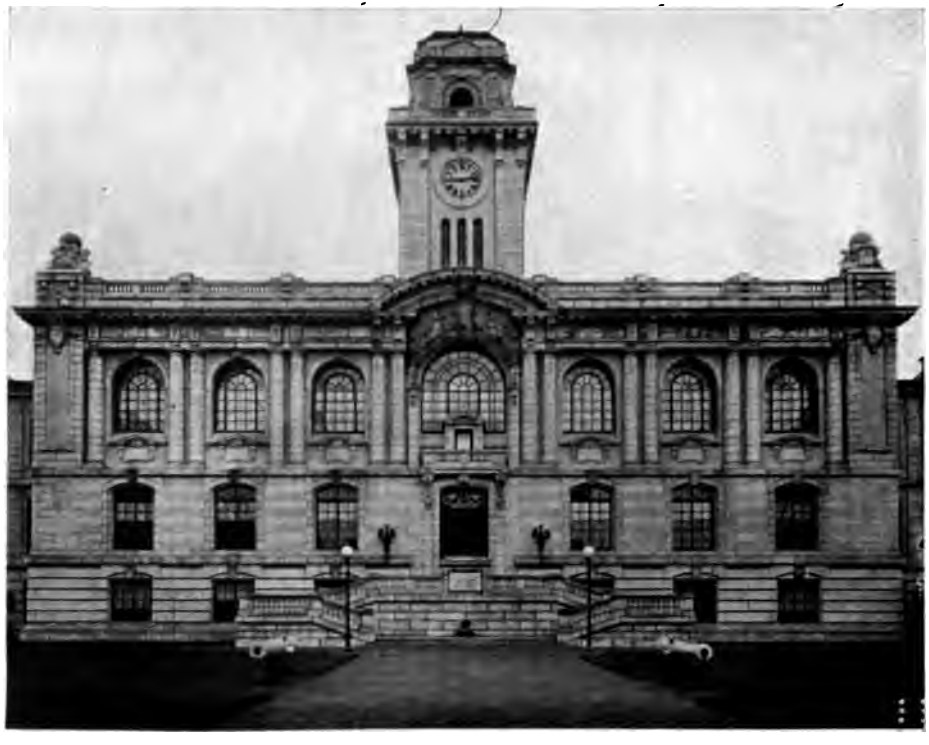
balcony of which can be seen Farragut Field and the bay beyond. Memorial Hall contains many tablets commemorative of naval officers and many portraits of noted seamen. This hall is used for assemblages of midshipmen, for an occasional dance, sometimes for the class germans, in general as a reading-room, and on Sunday evenings as the meeting-place of the Y. M. C. A. The room below this is the first classmen's smoking room and recreation room. From the rotunda on either side, stretch away the long dark corridors upon which the rooms of the midshipmen open. The first few rooms on either hand of the second floor—or deck as officially called—are used for the offices of the necessary officials who carry on the administration of the regiment of the midshipmen.

The armory (Dahlgren Hall) and the gymnasium (Luce Hall) are alike in external appearance, being connected to Bancroft Hall by red-tile roofed colonnades. These buildings are each 425 feet long, 100 feet wide, and 75 feet high, and are built of granite,

the armory being the only building completed in exact conformity with the original design. The former cost $445,635, the latter $589,720. Dahlgren Hall, the first building of the new Academy, houses the department of Ordnance and Gunnery, containing the recitation-rooms, the offices, rifles for the entire regiment, workshops, guns, torpedoes, mines, range finders, and fire control apparatus for instructional purposes. Luce Hall contains the Seamanship department, the gymnasium, swimming pool, and the offices of the physical-training branch of the Executive department. The Seamanship department has many models of great interest pertaining to its course of instruction. The large model of the auxiliary steam and sail full-rigged man-of-war *Antietam* affords an excellent real object lesson in the knowledge that was required in the sailing-ship days. Modern appliances for handling present-day vessels are on hand for the detail instruction of the midshipmen.

The next important group of buildings,

from the centre of which rises the clock tower, is known as the Academic Group. The first three buildings of the new Academy had been built of granite, but beginning with the Academic Group all the other buildings were constructed of slip-coated grey-enamelled brick. The change of material is not very noticeable because of the similarity of colour. This group consists of the main building, known as Mahan Hall, which contains the library and the auditorium, and two long wings, which house several academic departments. The library was established almost coincidently with the Naval Academy for the purpose of supplying the literary and professional wants of the institution and started with the transfer to it, under the direction of Secretary Bancroft, of a few hundred volumes of miscellaneous works which had belonged to the libraries of ships-of-war and navy yards. The yearly appropriation by Congress of two thousand dollars for its increase and support, begun in 1851, has continued to the present time, and all



MAHAN HALL

Armstrong

books that relate to the Navy and to the profession of a naval officer are purchased. The library undoubtedly possesses the most complete collection of naval literature in the country, being particularly rich in biography, general history, and mathematics. From the modest collection of 4751 volumes at the end of 1855, it had increased at the end of the year 1915 to the respectable figure of 55,744 volumes. The present quarters of the library in Mahan Hall were occupied in 1907. The auditorium, known as Trophy Hall, from its fine collection of flags that are of historical value to the country because of their capture in war or because of other associations, contains a stage, which serves for the entertainments given by the Midshipmen's Musical Clubs, the Masqueraders, and for the visiting glee clubs or lecturers, while its floor is used at times for the officers' hops, and the dancing instruction of the midshipmen. Maury Hall, the north-eastern wing of the Academic Group, contains the recitation-rooms and offices of the depart-

ments of Navigation, Mathematics, English, and Modern Languages. Sampson Hall, the south-western wing, houses similarly the department of Electrical Engineering and Physics, containing also one of the most complete electrical laboratories in the country, a chemical laboratory, and a large lecture-room having a seating capacity of four hundred that is used by all academic departments in common. This building cost $1,408,012. Architecturally and in the light of suitability for the purpose for which it was erected, this group is by far the most satisfactory of any upon the Academy grounds. It is a building worthy of the Naval Academy and of the country.

Beyond this building to the north-west is the building of the department of Marine Engineering and Naval Construction, known as Isherwood Hall. The postgraduate school is quartered on the third floor of this building. This is a well-lighted building, erected around two interior courts, and is 275 by 180 feet and cost $406,592. It contains

machine, boiler, coppersmith, and wood-working shops together with forge and moulding plants. The corridors of the main floor are occupied by many models operated by compressed air of all types of machinery, and by sections of vessels. Thus the appliances used in propelling, maintaining, and building vessels for the Navy can be explained from actual models.

The chapel, with its unusual ornate yellow and white dome, is the most prominent building of the Academy, and truth compels one to record that it is the ugliest as well. The chapel is built in the form of a Greek cross 120 x 120 feet, with a dome over the centre 201 feet in height. It cost $374,194. The corner-stone of this building was laid June 3, 1904, and the building was opened with divine service on May 24, 1908. The chapel has a total seating capacity of 1600. It is provided with an excellent electro-pneumatically operated organ. The crypt, very handsome though poorly lighted, contains the marble sarcophagus in which lie the remains

of the Navy's first great sailor and hero, John Paul Jones.

The Administration Building on Blake Row contains the offices of the Superintendent, the officer in charge of buildings and grounds, the board of labour employment, and has rooms for the meetings of the academic board and courts martial. Its top floor is occupied by the drafting-room; its basement is used by the printer.

The Superintendent's house, on Blake Row, the Officer's Mess on Goldsborough Row, in which bachelor officers are quartered, and the quarters of the various departmental heads on Porter Row ("Rascality Row") are all most substantial and roomy and are built of the same grey brick that was used in the construction of the Academic Group. The officers' quarters on Rodgers Row and Upshur Row are of red brick, and mark the only change from the uniformity of colour within the Academy walls. This change is not very noticeable, the location on the borders of the large athletic field and the

screen of maples bordering the row, favouring the obscuring of the colour contrast.

As the buildings are centrally lighted and heated, the power plant is necessarily quite extensive. The power house, built of the same grey brick as are the larger part of the buildings of the Academy, contains the boilers, generators, and pumps required. Briefly, the plant consists of seven Babcock and Wilcox 400 horse-power boilers carrying steam at pressure of 125 lbs., and fitted with Jones underfed stokers. The coal is fed by gravity from overhead bunkers of a total capacity of 2400 tons, the usual amount carried being but one half of this. For the fresh-water service there are two centrifugal pumps and one duplex plunger pump, the former of capacities of 500 gallons per minute each, and the latter of 1500 gallons; and, in addition, one centrifugal pump of 250 gallons performs the hot-water service. The salt-water service of the yard for fire protection and other purposes is maintained by two duplex plunger pumps of the capacity

of 1500 gallons per minute each. The boiler feed pumps are four in number. The heating system requires a total of six pumps, part of the yard being on the vacuum steam heating plan, the remainder on the gravity return plan. Thus sixteen large pumps are required to maintain the yard life. For electric power there are seven steam-driven generators and two subsidiary motor generator sets, the total capacity in kilowatts being 1120. The power required varies greatly,—in December it is 120,000 kilowatt hours and in July 60,000 kilowatt hours. This variation is due to the service being mainly a lighting service, with a large proportion of the midshipmen absent on practice cruises in the summer.

The water supply is of the utmost importance, and, both in respect to its purity and its sufficiency, the Naval Academy has water equal to the best in the world. There are three artesian wells in the Academy, two of which are in use, while one small well is active but is not required; they are approximately six hundred feet in depth. The

water is forced by pneumatic lift from the wells into the nearby underground reservoirs of a capacity of 2,400,000 gallons, 450,000 gallons being supplied daily by each well. From the reservoir the water runs by gravity to the fresh-water pumps in the power plant, which, at a pressure of seventy pounds per square inch, force it through three sand and ten carbon filters into the supply mains.

The system of fire hydrants calls for both salt and fresh water. There are sixteen of the former and ten of the latter. The pressure in time of use is one hundred and seventy pounds per square inch.

The Naval Academy is thus self-maintained in a manner similar to the Navy's industrial yards and plants.

On the same flat peninsula with the power plant are located a store house, a shop building, and the offices of the Supply and Pay Officer. The shop building is occupied by the workshops and paintshops of the repair and maintenance force of the yard, comprising carpenters, plumbers, steam-fitters, painters, etc.

At the edge of Worden Field are the two old frame houses that house the racing shells of the Naval Academy crews.

Beyond Dorsey Creek connected to the Academy by an ornamental concrete bridge of substantial structure, are the cemetery, the marine barracks, and the handsome modern buildings of the hospital with its quarters for officers and for nurses.

Several monuments in the grounds serve the midshipmen as object lessons of the deeds of heroism, victory, and sacrifice to duty performed by various officers of the Navy, and thus stimulate patriotism and a pride in their profession.

The beauty of the Naval Academy—and it is a beautiful place—lies primarily in its smooth green lawns, its fine big trees—great efforts to save which are being made—and in the blue waters of the bay and the Severn with its steep bluffs, all of which features combine to make it one of the most attractive spots in this world of ours.

CHAPTER XV

THE ENSIGN

"*Men mean more than guns in the rating of ships.*"—PAUL JONES.

THE midshipman, whose work, play, and surroundings have been traced in this book, as the end of his four years draws nearer, becomes more and more impatient to have the days speed by, the final examinations over, and June Week present. The routine has been unrelenting and, though he has enjoyed his academic life, still he longs for the increased freedom that he will have as a commissioned officer, and for the time when he can apply in practice all that he has learned from study and drill.

On Friday of June Week, at ten in the morning, the midshipman is graduated with

the awarding of his diploma by the Secretary of the Navy, or even by the President of the United States. Stirring patriotic addresses from the Secretary or President, as the case may be, and from one of the prominent men who compose the Board of Visitors,[1] complete the exercises, and the midshipman, now an ensign, makes his final preparation for leaving the Academy. Prior thereto, however, he takes part with his class in a snake dance on the armory floor, throwing away his midshipman's cap and singing, "No more rivers, no more rivers to cross." That evening at the dance—June Ball—which is given in his honour by the new first class, the graduate dons for the first time the full evening dress of the commissioned officer of the United States Navy with its broad

[1] The composition of the Board of Visitors has varied greatly from time to time. By the Naval Appropriation Act of 1916, this Board is composed of seven persons appointed by the President, two Senators, three Members of the House of Representatives, and the chairmen of the Committees on Naval Affairs of the Senate and the House, the last two being *ex-officio* members of the Board.

ensign's stripe, which at that time seems to give him greater pride than anything his life had held before.

The law provides that midshipmen upon graduation shall be commissioned ensigns in the Navy or shall be assigned by the Secretary of the Navy to fill vacancies in the lowest commissioned grades of the Marine or the Staff Corps of the Navy. In accordance with this law ten midshipmen of the class graduating in June, 1915, were commissioned second lieutenants in the Marine Corps. Thus far no appointments direct have been made to the Pay Corps, the only other corps to which graduates would logically be appointed.

This graduating class of 1915 comprised 244 members upon entrance. Upon graduation there remained but 180 members, and, out of this number, ten received commissions in the Marine Corps while seven were returned to civil life because of physical disqualifications. Thus out of the original 244 midshipmen in the class the Navy

obtained 163 ensigns.[1] This 67 per cent. commissioned of those entering is about the average output of the Academy. After leave of absence that varies from two weeks to one month the graduate reports for duty to the vessel to which he has been assigned. Sometimes an ensign is directed to report to the Pacific Coast, but generally of late years the assignment is to a vessel of the battleship or destroyer squadrons at the summer base, Narragansett Bay. The ensign is soon given his particular station as a part of the organization that makes the vessels of our Navy efficient fighting machines. This station will be that of a junior division officer in a turret or intermediate gun, the torpedo, fire control, or navigator's division, or in

[1] The class of midshipmen that graduated on June 2, 1916, entered with 265 members. At graduation it numbered 177, and after graduation 3 resigned, 6 were placed under observation for three months in the hope that they might, under special treatment, overcome disqualifying physical defects, 6 were commissioned as second lieutenants in the Marine Corps, and 162 received commissions as ensigns in the line of the Navy. The percentages for this class are thus 67 for completing the course, and 61 for the ensigns received by the line of the Navy.



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one of the three divisions of the engineering department.

With graduation from the Academy has come no real let down in work for the former midshipman, now the ensign; but instead, hard work, consuming many hours day and night, for he must win a place in the Navy and in the esteem of his fellow officers, a place that can be gained only by the hardest and most conscientious service that can be given.

Advancement in grade comes early, for, in but three years after graduation, he becomes a lieutenant (junior grade), a position and rank that he will retain a much longer time. He must pass a long written professional examination as well as a rigid physical examination before any advancement. Shorter physical examinations given each year serve to keep him in touch with his physical condition. His pay is sufficient to keep him from financial worry, and by offering such a stipend the country shows that it expects the major part of his time to be spent upon improving himself in the duties of his profession. The

salary at sea amounts to $1870 per year, which, three years after the date of the recipient's graduation from the Academy, upon his promotion to a lieutenancy (junior grade) is raised to $2200 per year. What a jump in pay a day after graduation brings, $600 to $1870 per year!

The Navy watches the officer's career closely by means of reports made by his seniors every six months. These reports of "fitness" cover every detail of the officer's character, industry, and ability. They form the guide for the future assignments and preferments and act as an incentive to every officer for the constant improvement of himself in his profession in the opinion of his fellow officers. If he is ever to win the coveted four-starred blue flag, he must do his level best at all times and in all positions.

The delight of doing things rather than of studying how they ought to be done from dry text-books is very real, and the young ensign finds that his profession is an interesting one, quite free from the sameness that

attaches to so many of the vocations of civilian life. While he may feel that, being just from the Academy, he knows much more than officers on board ship, who may be a little rusty in the theory of gunnery or machinery, yet he is shortly convinced that his freshly acquired knowledge is not as ready of application as it is in the hands of the experienced officers with whom he is associated. Yet he has the advantage of them in many ways and will be able to assist and become a promoter of efficiency and happiness, if he but applies the learning he has acquired while at the Naval Academy. The young officer faces at once that difficult problem, the handling of men. To solve it successfully he must apply the principles taught at the Academy. He remembers that these principles were succinctly stated as "the first attributes of an officer are good manners, coolness, self-control, and that leadership, an essential, is based fundamentally on proved superiority. The officer must be first in everything at all times."

The ensign feels that he must ever guard the sacred laws of naval discipline that have been taught him so carefully both by precept and by example at Annapolis, and that he must prevent any trifling therewith. It is the Navy's sheet anchor, and if ever lost, the lack of this discipline will be the Navy's ruin, and with it the ruin of our nation. The complete loyalty and good feeling that now exists between the officers and men must be maintained at all hazards.[1]

The young officer must cultivate the valuable habit of Admiral Farragut, who stated "there are comparatively few men from whom one could not learn something and that a naval officer should always be adding to his knowledge; it will enable him to be more useful some day; it is hard to say what a naval officer might not have to do." Farragut never lost sight of this duty of professional acquirement. He observed every harbour visited with regard to its defence

[1] Adapted from Rear Admiral Cradock's *Whispers from the Fleet*, p. 464.



AT ELEMENTARY TARGET PRACTICE

by sea or land. This habit has been neglected by some great men and always to their regret. Earl St. Vincent, when planning an attack upon Brest, said to his secretary: "Had *Captain Jervis* (meaning himself) surveyed Brest when he visited it in 1774, in 1800 Lord St. Vincent would not have been in want of information."

The future offers to the graduates much in opportunities for improving the service. The guns in use are becoming bigger year by year, but the science of metallurgy is already strained to the breaking point to produce steel forgings of requisite uniformity and strength for such guns. Masters of gun design are needed, and these gun designers must come from the graduates of the Naval Academy. If one's specialty be not ordnance, there are a sufficiency of other branches of the naval profession available for minds that are capable of delivering results. Marine engineering is not a finished art by any means and improvements in propelling machinery, in the power supply,

in gas engines, and the like are as needed as they are in ordnance and gunnery. As has been noted in the chapter on postgraduate schooling, no selections are made for the construction corps until the class has been at sea at least a year and a half. The ensign who desires a postgraduate course specializes in ordnance and engineering and is selected for these courses after three years of sea experience. As the officer grows older in his profession, the necessity for the other postgraduate education, that in strategy and tactics, given at the Naval War College at Newport, R. I., becomes more and more apparent, and accordingly he spends one year at least there in study that gives him the broadened view that commanders of squadrons must have.

The training in international law and diplomacy that is offered by the academic course finds its everyday application even more frequently in the case of the officers of our gunboats and light cruisers than in the case of the battleship commanders. The light

cruiser commander's rôle in foreign waters is a difficult one both in peace and in war. Trying political problems that involve international relations constantly arise and he must settle them immediately and alone, basing his decisions upon the law and precedents that he has learned at Annapolis. Naval officers in their calling to maintain peace have many difficult situations to handle, and for this, the many-sided education of the Academy and of the cruising in all parts of the world, with the broadening influence that comes from contact with the big men of the nations of the world, should eminently fit them. History shows how well this duty has been done in the past and the news of the present day indicates that affairs in Nicaragua, Haiti, and San Domingo are being conducted on the plan that makes for contentment and peace. The Samoan and Boxer troubles of recent date showed the Navy at the front in taking prompt and correct initiative with respect to the problems presented. The record of the multi-

tudinous situations that have arisen in both peace and war is an interesting one and familiarity with it makes the ensign ambitious to continue the example set him by officers of the Navy.

The Naval Academy course furnishes the young officer with the viewpoint of an educated man and with the general wide scope of information necessary for the man serving with the complicated mechanisms of vessels of the Navy. The ground work in all the various sciences he has, together with an appreciation of the difficulties and obstacles that must be overcome in order to reach any development. What ever duty he has to perform, his education has been sufficient to give him the start and to indicate to him where he can search out the details. Courageous men and men of great ability as seamen and with the requisite physical health and endurance can doubtless be found among the personnel of our all too small merchant marine, but, without the education of the Naval Academy, such men will be



DESTROYERS AT SEA

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utterly lost on board the intricate modern ship-of-war. The sense of and the realization of the responsibility of the claims upon and the duties of those chosen as leaders, with the ideas of the organization and the discipline of a ship of the line that is necessary to prevent such a vessel from becoming a helpless mass of steel, wood, and brass, can come only from the years spent in imbibing the teachings and discipline of the Naval Academy and of the practice cruises.

The Academy has had many setbacks in its lifetime but thus far has survived them all, and the belief is apparently well founded that it is now a recognized, necessary part of our national life and as such will be a permanent part. The institution had no easy task in starting, and its seventy-one years of academic life have not been spent in cruising under all plain sail and stunsails to a favouring wind, but too often in cruising under reefed topsails, in weathering many adverse gales directed at its very existence by many prominent people. That Farragut

APPENDIX I

UNITED STATES NAVAL ACADEMY

COURSE OF INSTRUCTION, 1916–1917

FIRST YEAR—FOURTH CLASS

FIRST TERM

Departments	Periods each week	Subjects	Text-books
MARINE ENGINEERING AND NAVAL CONSTRUCTION.	3	Descriptive geometry and drawing.	Bartlett and Johnson's Engineering Descriptive Geometry and Drawing.
MATHEMATICS	6	Plane and solid geometry	Wentworth's Plane and Solid Geometry (Revised).
		Algebra and logarithms	Wentworth's College Algebra (Revised). Bowditch's Useful Tables.*
ENGLISH	4	English (including debating)	Herrick & Damon's New Composition and Rhetoric. Webster's Collegiate Dictionary.* Sandwick and Bacon's High School Word Book. Note Book.
MODERN LANGUAGES (One half of the class studies Spanish and the other half French.)	3	Spanish	Elementary Course in Spanish Pronunciation, U. S. School of Languages. Abridged Spanish Grammar, Olmsted and Gordon New Spanish Dictionary, Appleton.*
	3	French	Elementary Course in French Pronunciation, U. S. School of Languages. Shorter French Course, Fraser and Squair. Heath's French and English Dictionary.* Marion's Le Verbe.*

SECOND TERM

MARINE ENGINEERING AND NAVAL CONSTRUCTION.	3	Descriptive geometry and drawing.	Bartlett and Johnson's Engineering Descriptive Geometry and Drawing.
MATHEMATICS	6	Plane and spherical trigonometry.	Brown's Trigonometry and Stereographic Projections.
		Stereographic projections	Bowditch's Useful Tables.
			New Analytic Geometry, Smith and Gale.
ENGLISH	4	English (including debating)	Shakespeare's Henry IV., Part I., Temple edition.
			Dana's Two Years Before the Mast.
			Reich's Foundations of Modern Europe.
			Brewster's Studies in Structure and Style.
			Hale's Man Without a Country.
			Poe's Tales of Mystery and Imagination, Everyman's Library.
MODERN LANGUAGES (One half of the class studies Spanish and the other half French.)	3	Spanish	Continuation of first term's work.
	3	French	Continuation of first term's work.

[Reference books are marked *]

SECOND YEAR—THIRD CLASS

FIRST TERM

Departments	Periods each week	Subjects	Text-books
MARINE ENGINEERING AND NAVAL CONSTRUCTION.	3	Mechanical processes and drawing.	Danforth's Mechanical Processes. Bureau Steam Engineering, Tables of Standards. Department Marine Engineering Notes.* Bartlett's Mechanical Drawing.*
MATHEMATICS	5	Calculus and analytic geometry.	Osborne's Differential and Integral Calculus. Bowditch's Useful Tables.*
ELECTRICAL ENGINEERING AND PHYSICS.	4	Elementary physics[1]	Carhart's College Physics. Jones's Problems in Physics. Lecture Notes.
ENGLISH	2	Constitutional law Naval history English themes	Fenton's Constitutional Law. Hale's Famous Sea Fights. Themes.
MODERN LANGUAGES (One half of the class studies Spanish and the other half French.)	3	Spanish	Abridged Spanish Grammar, Olmsted and Gordon. New Spanish Dictionary, Appleton.*
	3	French	Shorter French Course, Fraser and Squair. Heath's French and English Dictionary.* Marion's Le Verbe.*

SECOND TERM

MARINE ENGINEERING AND NAVAL CONSTRUCTION.	3	Elementary engineering.....	Naval Reciprocating Engines and Auxiliary Machinery. Lyon and Hind's Marine and Naval Boilers. Danforth's Mechanical Processes.
MATHEMATICS.....	5	Calculus.....	Osborne's Differential and Integral Calculus. Bowditch's Useful Tables.*
ELECTRICAL ENGINEERING AND PHYSICS.	4	Elementary electricity and magnetism.	Carhart's College Physics.
		Chemistry.....	Remsen's Introduction to the Study of Chemistry. Lecture Notes. Dashiell's Stochiometrical Problems in Chemistry.
ENGLISH.....	2	U. S. naval history and naval history.	Clark's Short History of U. S. Navy. Hale's Famous Sea Fights. Department lectures and maps.
		Themes.....	Themes.
MODERN LANGUAGES..... (One half of the class studies Spanish and the other half French.)	2	Spanish.....	Abridged Spanish Grammar, Olmsted and Gordon. New Spanish Dictionary, Appleton.* Gil Blas de Santillana, Geddes and Josselyn.
	2	French.....	Shorter French Course, Fraser and Squair. Heath's French and English Dictionary.* Marion's Le Verbe.* French Composition, Koren.

[1] Includes 16 Friday evening lecture periods.

[Reference books are marked *]

THIRD YEAR—SECOND CLASS

FIRST TERM

Departments	Periods each week	Subjects	Text-books
MARINE ENGINEERING AND NAVAL CONSTRUCTION	4	Boilers and mechanism.....	Lyon & Hinds's Marine and Naval Boilers. Schwamb & Merrill's Elements of Mechanism.
MATHEMATICS.....	5	Mechanics..... Hydromechanics..... Strength of materials.....	Miller and Lilly's Analytic Mechanics. Alger's Hydromechanics. Smith's Strength of Materials.
ELECTRICAL ENGINEERING AND PHYSICS.	3	Electrostatics. Magnetism. Electro-magnetism. Electro-chemistry. Direct currents.	Brooks & Poyser's Magnetism and Electricity. Bullard's Naval Electricians' Text-book.
ENGLISH.....	2	English classics and themes...	Roe and Elliott's English Prose. Macaulay's Critical and Historical Essays, Vol. I., Everyman's Library. Carlyle's Heroes and Hero Worship, Handy Volume Classics. Neilson's Shakespeare's Hamlet.
MODERN LANGUAGES..... (One half of the class studies Spanish and the other half French.)	2	Spanish.....	Abridged Spanish Grammar, Olmsted and Gordon. New Spanish Dictionary, Appleton.*
	2	French.....	Shorter French Course, Fraser and Squair. Heath's French and English Dictionary.*

SECOND TERM

ORDNANCE AND GUNNERY.....	2	Ordnance and ballistics.....	Naval Ordnance, 1915. Interior Ballistics, 1916. Elastic Strength of Guns, Alger, 1916.
NAVIGATION.....	4	Astronomy..... Navigation.....	White's Astronomy. Muir's Navigation and Compass Deviations. American Practical Navigator, Bowditch. Nautical Almanac.* Azimuth Tables.*
MARINE ENGINEERING AND NAVAL CONSTRUCTION.	5	Engines.....	Sterling's Internal Combustion Engine Manual. Naval Reciprocating Engines and Auxiliary Machinery.
ELECTRICAL ENGINEERING AND PHYSICS.	3	Direct currents..... Principles of dynamo-electric machines. Principles of alternating currents. Radio telegraphy.	Brooks & Poyser's Magnetism and Electricity. Bullard's Naval Electricians' Text-book.
MODERN LANGUAGES..... (One half of the class studies Spanish and the other half French.)	1 1	Spanish..... French.....	Spanish Composition, Crawford. New Spanish Dictionary, Appleton.* French Composition, Koren. Heath's French and English Dictionary.*

[Reference books are marked *]

FOURTH YEAR—FIRST CLASS

FIRST TERM

Departments	Periods each week	Subjects	Text-books
SEAMANSHIP	3	International law	Stockton's Manual of International Law.
		Seamanship	Knight's Seamanship.
			The Deck and Boat Book, 1914.
ORDNANCE AND GUNNERY	4	Ordnance and ballistics	Naval Ordnance, 1915.
			Alger's Exterior Ballistics, 1915.
			Gunnery Instructions, 1913.
NAVIGATION	3	Theory and practice of navigation.	Muir's Navigation and Compass Deviations.
			Bowditch's American Practical Navigator.
			Nautical Almanac.*
			Azimuth Tables.*
MARINE ENGINEERING AND NAVAL CONSTRUCTION.	2	Turbines	Meyer's Steam Turbines.
ELECTRICAL ENGINEERING AND PHYSICS.	3	Dynamo-electric machines.	
		The application of electricity to naval purposes.	Bullard's Naval Electricians' Text-book.
		Wiring	Lecture Notes.
ENGLISH	.....	Public speaking. (Thursday evenings.)	
MODERN LANGUAGES	1	Spanish	Zaragüeta, Howland.
(One half of the class studies Spanish and the other half French.)			New Spanish Dictionary, Appleton.*
	1	French	French Composition, Koren.
			Heath's French and English Dictionary.*
NAVAL HYGIENE	.....	Effects of alcohol and narcotics	Physiology, First Aid, and Naval Hygiene (1916). Dr. R. G. Heiner, U. S. N.
		First aid to the injured. (14 Friday evening periods.)	

SECOND TERM

SEAMANSHIP	4	Seamanship	Knight's Seamanship.
			Signal Book, U. S. Navy.
		Military law	Forms Procedure, U. S. Navy.
		Naval tactics	U. S. Navy Regulations.
		Regulations	Grant's School of the Ship.
			Lectures on Professional Subjects.
ORDNANCE AND GUNNERY	3	Torpedoes and gunnery	Official Pamphlets on Mines and Torpedoes.
			Notes on Fire Control.
			U. S. Naval Instructions.
			Ship and Gun Drills, 1914.
			Gunnery Instructions, 1913.
NAVIGATION	3	Theory of compass deviations.	Muir's Navigation and Compass Deviations.
		Surveying	Logan's Marine Surveying.
		Practical navigation	Practical Manual of the Compass.
			Bowditch's American Practical Navigator.
			Nautical Almanac.*
			Azimuth Tables.*
MARINE ENGINEERING AND NAVAL CONSTRUCTION.	3	Naval construction	Robinson's Naval Construction.
			Holmes's Experimental Engineering.
ELECTRICAL ENGINEERING AND PHYSICS.	3	Faults of dynamos and motors.	Bullard's Naval Electrician's Text-book.
		Elementary study of alternating currents.	Robinson's Manual of Wireless Telegraphy.
		A. C. machines and instruments.	Elements of Electrical Engineering, Alternating Currents, Franklin and Esty.
		Electrical devices and instruments.	
		Radio telegraphy.	
ENGLISH	.....	Public speaking. (Thursday evenings.)	
MODERN LANGUAGES (One half of the class studies Spanish and the other half French.)	[1]	Spanish	Zaragüeta, Howland.
			Spanish Nautical Phrase Book and Reader.
			New Spanish Dictionary, Appleton.*
	[1]	French	French Composition, Koren.
			French Nautical Phrase Book and Reader.
			Heath's French and English Dictionary.*

[1] Friday evening period.

[Reference books are marked *]

GENERAL SCHEME OF THE COURSES OF STUDY IN THE POSTGRADUATE DEPARTMENT

MECHANICAL ENGINEERS

Time	9–10	10–11	11–12	12–1	1–2	2–5:30
Mon.	Thermo Lecture	Study	Mechanics Lecture	Gym.		Marine Engine Design Drafting Room
Tues.	Electricity A. C. Lecture	Study	Math. Lecture A. Study B.	Math. Lecture B. Study A.		Electrical Laboratory
Wed.	Electricity D. C. Lecture	Study	Steam Machinery Lecture	Gym.		Eng. Lab.
Thur.	Electricity A. C. Lecture	Study	Math. Lecture B. Study A.	Math. Lecture A. Study B.		Eng. Lab.
Fri.	Thermo Lecture	Study	Applied Mechanics Lecture	Gym.		Electrical Lab.
Sat.	Study	Electricity D. C.	Lab. Reports			

Preparation hours in classroom 10.5
Home work..... 13.5



NAVAL CONSTRUCTION

Time	8–9	9–10	10–11	11–12	12–1	1–4:30
Mon.	Mech. Lecture	Study	Heat Engg. Lecture	Gym.		Elec. Lab.
Tues.	Math. Lecture	Study	Heat Engg. Lecture	Warship Design		Warship Design
Wed.	Mech. Lecture	Study	Elect. Lecture	Gym.		Lab. Reports
Thur.	Math. Lecture	Engineering Lab.				Chem. Lab.
Fri.	Mech. Lecture	Study	Chemistry Lecture	Gym.		Chem. Lab.
Sat.	Math. Lecture	Engineering Lab.				

Preparation hours in class 7.5
Home work..... 16.



GENERAL SCHEME OF THE COURSES OF STUDY IN THE POSTGRADUATE DEPARTMENT—*Continued*

SCHEDULE FOR ORDNANCE GROUP

Time	8–9	9–10	10–11	11–12	12–1	1–2	2–4:30
Mon.	Ordnance		Mechanics		Gym.		Ordnance
			Lecture	Study			Study
Tues.	Mathematics			Metallurgy			Chemistry
	Study	Lecture	Study	Engineering Laboratory			
Wed.	Metallography		Ordnance		Gym.		Engineering Laboratory
Thur.	Mathematics			Chemistry			Metallography
	Study	Lecture	Study				
Fri.	Mechanics		Ordnance Optics		Gym.		Mechanics Study
	Study	Lecture					
Sat.	Mathematics		Metallography				
	Study	Lecture					

NOTE.—This schedule is adhered to with but slight changes due to completion of subjects and the taking up of additional ones.

APPENDIX II

REGULATIONS GOVERNING THE ADMISSION OF CANDIDATES INTO THE NAVAL ACADEMY AS MIDSHIPMEN

GENERAL REMARKS

1. There being no provision whatever for the payment of the travelling expenses of rejected candidates for admission, no candidate should fail to provide himself in advance with the means of returning home, in case of his rejection before either of the examining boards, as otherwise he may be put to considerable inconvenience.[1]

2. It is suggested to all candidates for admission to the Naval Academy, that, before leaving their places of residence for Annapolis, they should cause themselves to be *thoroughly examined by a competent physician*, particularly regarding eyesight, hearing, and heart trouble; and by a teacher or instructor in good standing. A defect such as varicocele, which is ordinarily removable by operation, should be remedied prior to appearing at the Naval Academy for physical examination. By such an examination any serious physical disqualification or deficiency in mental preparation would be revealed, and the candidate probably spared the expense and trouble of a useless journey and the mortification of rejection. It should be understood that the informal examination herein recom-

[1] NOTE BY AUTHOR. Special attention is directed to the entrance deposit of $300 required of every midshipman, p. 348.

mended is solely for the convenience and benefit of the candidate himself, and can in no manner affect the decision of the examining boards at Annapolis.

3. A sound body and constitution, suitable preparation, good natural capacity, an aptitude for study, industrious habits, perseverance, an obedient and orderly disposition, and a correct moral deportment are such essential qualifications that candidates knowingly deficient in any of these respects should not, as many do, subject themselves and their friends to the chances of future mortification and disappointment by accepting appointments at the Naval Academy and entering on a career which they can not successfully pursue.

4. The selection of candidates, by competitive examination or otherwise, for nomination from any congressional district, is entirely in the hands of the Member of Congress entitled to the appointment, and all applications for appointment or inquiries relative to competitive examinations should be addressed to the Congressman representing the congressional district in which the vacancy exists.

Copies of the entrance regulations showing a syllabus of the first year's work at the Naval Academy and specimen examination questions may be obtained on application to the Bureau of Navigation, Navy Department, or to the Superintendent of the Naval Academy; and as soon as nominated a copy of each of these publications will be forwarded direct to each candidate in order that he may spend his time profitably at his local school, and be better prepared to pursue his course at the Naval Academy successfully.

5. **Special attention is called to the physical requirements of candidates, pp. 332 and 333.**

NOMINATION

6. The students at the Naval Academy are styled midshipmen.

7. Three midshipmen are allowed for each Senator, Representative, and Delegate in Congress, two for the District of Columbia, and fifteen appointed each year from the United States at large. The appointments from the District of Columbia and fifteen each year at large are made by the President. It is the custom of Presidents to give the appointments of midshipmen at large to the sons of officers of the Army and Navy for the reason that officers, owing to the nature of their duties, are usually not in a position to establish permanent residence. The vacancies from the District of Columbia are filled by competitive examination of candidates residing in the District. The selection of candidates, by competitive examination or otherwise, for nomination for vacancies in the quota of Senators, Representatives, and Delegates in Congress is entirely in the hands of each Senator, Representative, and Delegate in Congress having a vacancy; and all applications for appointments or inquiries relative to competitive examinations should be addressed accordingly.

8. The law authorizes the appointment of twenty-five enlisted men each year to be selected as a result of a competitive examination of enlisted men of the Navy and Marine Corps who have been in the service at least one year and who are under twenty years of age by August 15th of the year it is desired to enter. The mental and physical requirements for these candidates are the same as for other candidates for midshipmen. The competitive examination of these enlisted men is held on the third Tuesday in April of each year and is the regular examination given to candidates nominated for vacancies for midshipmen.

9. One midshipman is allowed from Porto Rico, who must be a native of that island. The appointment is made by the President on the recommendation of the governor of Porto Rico. One midshipman for each class

is allowed from the Philippine Islands upon the appointment of the Governor General.

10. The course for midshipmen is four years. Examinations on the ground covered are held at the end of each academic term. During the summer, midshipmen of the first, second, and third classes go to sea for about three months.

11. Midshipmen after graduation are commissioned as ensigns in the Navy, and occasionally to fill vacancies in the Marine Corps and in certain of the staff corps of the Navy.

12. "Hereafter the Secretary of the Navy shall, as soon as possible after the 1st day of June of each year preceding the graduation of midshipmen in the succeeding year, notify in writing each Senator, Representative, and Delegate in Congress of any vacancy that will exist at the Naval Academy because of such graduation, or that may occur for other reasons, and which he shall be entitled to fill by nomination of a candidate and one or more alternates therefor. The nomination of a candidate and alternate or alternates to fill said vacancy shall be made upon the recommendation of the Senator, Representative, or Delegate, if said recommendation is made by the 4th day of March of the year following that in which said notice in writing is given, but if it is not made by that time the Secretary of the Navy shall fill the vacancy by appointment of an actual resident of the State, congressional district, or Territory, as the case may be, in which the vacancy will exist, who shall have been for at least two years immediately preceding the date of his appointment an actual and *bona-fide* resident of the State, congressional district, or Territory, in which the vacancy will exist and of the legal qualification under the law as now provided. In cases where by reason of a vacancy in the membership of the Senate or House of Representatives, or by the death or declination of a candidate for

admission to the Academy, there occurs or is about to occur at the Academy a vacancy for any State, district, or Territory that can not be filled by nomination as herein provided, the same may be filled as soon thereafter and before the final entrance examination for the year as the Secretary of the Navy may determine."—(*Act approved June 29, 1906.*)

13. Candidates allowed for congressional districts, for Territories, and for the District of Columbia must be actual residents of the districts or Territories, respectively, from which they are nominated.

14. All candidates must, at the time of their examination for admission, be between the ages of 16 and 20 years. A candidate is eligible for examination on the day he becomes 16 and is ineligible on the day he becomes 20 years of age.

EXAMINATION

15. *"All candidates for admission into the Academy shall be examined according to such regulations and at such stated times as the Secretary of the Navy may prescribe. Candidates rejected at such examinations shall not have the privilege of another examination for admission to the same class unless recommended by the board of examiners."*—(*Rev. Stat.*, § *1515.*)

16. When any candidate who has been nominated upon the recommendation of a Senator, Member, or Delegate of the House of Representatives is found, upon examination, to be physically or mentally disqualified for admission, the Senator, Member, or Delegate shall be notified to recommend another candidate, who shall be examined according to the provisions of the preceding section.

17. Beginning with the year 1913, but two examinations for admission of midshipmen to the Naval Academy

will be held each year, as follows: The first examination to be held on the third Tuesday in February, the second on the third Tuesday in April, under the supervision of the Civil Service Commission, at four hundred and eight points, covering the entire country, and candidates may select their place for examination from these points. All those qualifying mentally who are entitled to appointment in order of nomination will be notified by the Superintendent of the Naval Academy when to report at the academy for physical examination, and if physically qualified will be appointed.

Candidates may be examined at any of the places at which examinations are held.

Senators and Representatives are requested, when designating their nominees to give the place at which it is desired they should be examined.

18. Alternates are given the privilege of reporting for mental examinations at the same time with the principal.

19. No examination will be held later than the third Tuesday in April. The large number of midshipmen to be instructed and drilled makes this rule necessary, and it is to the great advantage of the new midshipmen themselves. The summer months are utilized in preliminary instruction in professional branches and drills, such as handling boats under oars and sails, and in seamanship, gunnery, and infantry drills. These practical exercises form excellent groundwork for the academic course.

20. The examination papers used in all examinations are prepared at the Naval Academy and the examinations of candidates are finally passed upon by the academic board. No candidate shall be admitted unless, in the opinion of the academic board, he shows the requisite mental qualifications.

21. *Under the law, candidates failing to pass the entrance examination can not be allowed another examination*

for admission to the same class unless recommended for re-examination by the academic board.

22. Candidates who have successfully passed the entrance examination in a previous year shall not be required to take another mental examination for admission, in the event of reappointment.

23. The Civil Service Commission merely conducts the examination of candidates whose names have been furnished by the Navy Department. All correspondence relative to the nomination and examination of candidates should be addressed to the Bureau of Navigation, Navy Department, Washington, D. C.

24. Candidates will be required to enter the academy *immediately after passing the prescribed mental and physical examinations*, or at such times as the Secretary of the Navy may designate.

25. *No leaves of absence will be granted to midshipmen of the fourth class.*

26. Candidates will be examined physically at the Naval Academy by a board composed of three medical officers of the Navy, whose decision will be final.

Physical examinations will habitually be held at the following times:

For candidates mentally examined in February, April, or in a previous year, at a date designated by the Superintendent of the Naval Academy, who will inform each candidate when to present himself for physical examination. The usual date for the physical examination is the *first week in June* of each year.

MORAL REQUIREMENTS

27. Candidates must be of good moral character. *No candidate who has been dismissed for "inaptitude" in accordance with the act of Congress approved April 9, 1906, shall be reappointed or allowed to re-enter the Naval Academy.*

Appendix II

PHYSICAL REQUIREMENTS

28. Candidates are required to be of good moral character, physically sound, well formed, and of robust constitution.

29. Any one of the following conditions will be sufficient to cause the rejection of a candidate, viz.:

(*a*) Feeble constitution, inherited or acquired.

(*b*) Retarded development.

(*c*) Impaired general health.

(*d*) Decided cachexia, diathesis, or predisposition; anæmia, from malaria or from intestinal parasites, as hookworm.

(*e*) Any disease, deformity, or result of injury that would impair efficiency; such as—

(*ea*) Weak or disordered intellect.

(*eb*) Cutaneous or communicable disease.

(*ec*) Unnatural curvature of the spine, torticollis, or other deformity.

(*ed*) Inefficiency of either of the extremities or large articulations from any cause.

(*ef*) Epilepsy or other convulsions within five years.

(*f*) Impaired vision, disease of the organs of vision, imperfect colour sense; *visual acuteness must be normal, i. e.,* $\frac{20}{20}$ *for each eye without the aid of glasses.* There shall be no deviation from this standard.

(*g*) Impaired hearing or disease of either ear. The organs of hearing, both the conductive apparatus (outer and middle ear) and the percipient apparatus (internal ear), must be free from disease. In testing the hearing of the candidate, the voice, the ticking of a watch, and, if practicable, Politzer's acoumeter shall be employed.

The voice is a more reliable method of determining the acuteness of hearing than the ticking of an ordinary watch, as it allows for variations in hearing, with the modifications produced by changes in pitch and tone. Hearing

in each ear must be normally acute to the spoken and whispered voice. In examining the acuteness of the hearing with the voice, one ear of the candidate should be closed while the other ear is being examined, and his eyes should be covered to prevent lip reading. The ticking of an ordinary watch should be heard a distance of forty inches.

(*h*) Chronic nasal catarrh, ozæna, polypi, or great enlargement of the tonsils.

(*i*) Impediment of speech to such an extent as to impair efficiency in the performance of duty.

(*k*) Disease of heart or lungs or decided indications of liability to cardiac or pulmonary affections.

(*l*) Hernia, complete or incomplete, and undescended testis.

(*m*) Varicocele, sarcocele, hydrocele, stricture, fistula, hæmorrhoids, or varicose veins of lower limbs.

(*n*) Phimosis and diseases of the genito-urinary organs.

(*o*) Ingrowing nails, bunions, cross or hammer toes, flat feet or other deformity of feet.

(*p*) Loss of many teeth, or teeth generally unsound. Marked overbite, or lack of occlusion of jaws. There should be at least eight opposing molars, two on each side in each jaw. All defective teeth should have permanent fillings. Much time can be saved by previous attention to this requirement.

30. Attention will also be paid to the stature of the candidate, and no one *manifestly* under size for his age will be received at the academy. The height of candidates for admission shall not be less than 5 feet 2 inches between the ages of 16 and 18 years, and not less than 5 feet 4 inches between the ages of 18 and 20 years; and the minimum weight at 16 years of age shall be 111 pounds, with an increase of not less than 3 pounds for each additional year or fraction of a year over one half. Any *marked* deviation in the height and weight relative to the age of

a candidate will add materially to the consideration for rejection.

31. Candidates must be unmarried, and any midshipman who shall marry, or who shall be found to be married, before his final graduation, shall be dismissed from the service.

MENTAL REQUIREMENTS

32. Candidates will be examined mentally in punctuation, spelling, English grammar, geography, United States history, arithmetic, algebra through quadratic equations, and plane geometry (five books of Chauvenet's geometry or equivalent). Deficiency in any one of these subjects may be sufficient to insure the rejection of the candidate. Maximum mark 4.00; passing mark 2.50. Certificates from colleges and high schools will not be accepted in lieu of entrance examinations. All candidates must take the prescribed mental and physical examinations.

GENERAL CHARACTER OF THE MENTAL EXAMINATION

33. READING AND WRITING.—Candidates must be able to read understandingly, and with proper accent and emphasis, and to write legibly, neatly, and rapidly.

34. SPELLING.—They must be able to write, from dictation, a list of not more than 100 selected words, or paragraphs from standard pieces of English literature, both prose and poetry, sufficient in number to test fully their qualifications in this branch. The spelling throughout the examination will be considered in marking the papers. The academic board are instructed not to reject a candidate whose only deficiency is in spelling when the mark therefor is above a certain figure, to be fixed by the board, subject to the revision of the department.

35. PUNCTUATION AND CAPITALS.—They must be familiar with the rules for punctuation and for the use of

capitals. In order to test their knowledge, sentences may be given for correction. Punctuation and the use of capitals throughout the examination will be considered in marking papers.

36. GRAMMAR.—Candidates must exhibit thorough familiarity with English grammar; they must be able to analyze and parse any sentence given, showing clearly the relations between the different parts of speech, and giving the rules governing those relations. The subject and predicate in the sentence must be given, with modifiers (if any), and also the part of speech, and kind, case, voice, mood, tense, number, person, degree of comparison, etc., as the case may be, of each word, and its relation to other words in the sentence.

They must be able to define the terms used in grammar a number of which may be given as a test of their knowledge.

Sentences containing grammatical mistakes may be given for correction.

A composition on one of three subjects will be required.

Since the school grammars used in different parts of the country vary among themselves in their treatment of certain words, an answer approved by any grammar of good repute will be accepted.

37. GEOGRAPHY.—Candidates will be required to pass a satisfactory examination in descriptive geography, particularly of our own country. Questions will be given under the following heads: The definitions of latitude and longitude (including problems with regard to differences of time between places); the zones; the grand divisions of land and water; the character of coast lines; the climate of different parts of the United States; trade winds; the direction and position of important mountain chains and the locality of the higher peaks; the position and course of the principal rivers, their tributaries, and the bodies of water into which they flow; the position of important seas, bays, gulfs, and arms of the sea; the position of

independent States, their boundaries and capital cities; the position and direction of great peninsulas and the situation of important and prominent capes, straits, sounds, channels, and the most important canals; great lakes and inland seas; position and political connection of important islands and colonial possessions; location of cities of historical, political, or commercial importance, attention being especially called to the rivers and bodies of water on which cities are situated; the course of a vessel in making a voyage between well-known ports.

The candidate's knowledge of the geography of the United States can not be too full or specific on all the points referred to above. Accurate knowledge will also be required of the position of the country with reference to other States, and with reference to latitude and longitude of the boundaries and relative position of the States and Territories, of the name and position of their capitals, and of other important cities and towns.

The following named text-books are used in preparing examination questions: Maury's *New Complete Geography; Complete Geography*, by A. E. Fry; *Natural Advanced Geography*, by Redway and Hinman.

38. UNITED STATES HISTORY.—The examination in this branch will include questions concerning the early settlements in this country; the forms of government in the colonies; the causes, leading events, and results of wars; and prominent events in the history of our Government since its foundation.

The following named text-books are used in preparing examination questions: *A Student's History of the United States*, by Edward Channing; *The Students' American History*, by D. H. Montgomery; *A School History of the United States*, by John Bach McMaster.

39. ARITHMETIC.—The candidate will be required:

To express in figures any whole, decimal, or mixed number; to write in words any given number; to perform with

facility and accuracy the various operations of addition, subtraction, multiplication, and division of whole numbers, whether abstract or compound, and to use with facility the tables of money, weights, and measures in common use, including English money.

To reduce compound numbers from one denomination to another, and to express them as decimals or fractions of a higher or lower denomination; to state the number of cubic inches in a gallon and the relation between the troy and avoirdupois pounds, and to reduce differences of time to differences of longitude, and *vice versa*.

To define prime and composite numbers; to give the tests of divisibility by 3, 5, 9, 11, 25, and 125; to resolve numbers into their prime factors, and to find the least common multiple and the greatest common divisor of large as well as of small numbers.

To be familiar with all the processes of common and decimal fractions; to give clearly the reasons for such processes, and to be able to use the contracted methods of multiplication and division given in the ordinary text-books on arithmetic.

To define ratio and proportion, and to solve problems in simple and compound proportion.

To solve problems involving the measurement of rectangular surfaces and of solids, to find the square roots and the cube roots of numbers, and to solve simple problems under percentage, interest, and discount.

The candidates are required to possess such a thorough understanding of all the fundamental operations of arithmetic as will enable them to apply the various principles to the solution of any complex problem that can be solved by the methods of arithmetic; in other words, they must possess such a complete knowledge of arithmetic as will enable them to proceed at once to the higher branches of mathematics without further study of arithmetic.

The required ground is completely covered by any one

of the following text-books: *Advanced Arithmetic*, by G. A. Wentworth (first 16 chapters); *A High School Arithmetic*, by Wentworth and Hill; *Standard Arithmetic*, by William J. Milne; *Arithmetic in Theory and Practice*, by J. Brook-Smith.

40. ALGEBRA.—The examination in algebra will include questions and problems upon the fundamental rules, factoring, greatest common divisor, least common multiple, algebraic fractions, equations of the first degree with one or more unknown quantities, simplification of expressions involving surds, and the solution and theory of quadratic equations, problems involving the formation of simple and quadratic equations, and the meaning and law of exponents, positive, negative, and fractional. The requirements are fully expressed in Wentworth's *College Algebra* (Revised), first 14 chapters, or Wentworth's *Elementary Algebra*, first 21 chapters; Milne's Academic Algebra, 324 pages.

41. GEOMETRY.—In geometry, candidates will be required to give accurate definitions of terms used in plane geometry, to demonstrate any proposition of plane geometry as given in the ordinary text-books, and to solve simple geometrical problems, either by a construction or by an application of algebra. Either of the following text-books covers the ground required in geometry: Wentworth and Hill's *Plane and Solid Geometry* (5 books); Robbin's *Plane Geometry;* Chauvenet's *Geometry* (5 books).

42. The entrance examination used in April, 1916, for the purpose of determining the mental qualifications of candidates for admission is quoted below in full.

PROGRAM OF ENTRANCE EXAMINATIONS

Time	Subjects	Sheet
1st day:		
3 hours.....	1. Geometry (9 A.M. to 12 M.).....	1
	(Intermission, 2 hours.)	
3 hours....	2. Algebra (2 to 5 P.M.).....	2
2d day:		
3 hours.....	3. Arithmetic (9 A.M. to 12 M.)....	3
	(Intermission, 2 hours.)	
20 minutes..	4. Spelling (2 to 2.20 P.M.).....	4
2 hours.....	5. Grammar (2.20 to 4.20 P.M.)....	5
3d day:		
2 hours.....	6. Geography (9 to 11 A.M.)	6
	(Intermission, 3 hours.)	
2 hours.....	7. United States History (2 to 4 P.M.)	7

SAMPLE ENTRANCE EXAMINATION

April, 1916

FIRST SUBJECT

GEOMETRY

[Time allowed: 2 hours]

1. (*a*) Define (1) isosceles triangle, (2) trapezium, (3) parallelogram, (4) mean proportional, (5) regular polygon. Given two straight lines intersecting at an angle of 60 degrees, indicate the locus of points equidistant from the two lines.

(*b*) The sum of the interior angles of a regular polygon is 2700 degrees. How many sides has the polygon?

The medians of an isosceles triangle are 18 inches, 15 inches, and 15 inches. Find the area of the triangle.

2. (*a*) Prove that the sum of the three straight lines drawn from any point within a triangle to the three vertices is less than the sum and greater than half the sum of the three sides of the triangle.

(*b*) Two sides of a parallelogram, 6 feet and 8 feet in length, include an angle of 45 degrees. Find its area.

The side of a rhombus is 5 feet and its area is 12½ square feet. What are its angles?

3. (*a*) The sides of a triangle are 102, 104, and 106 feet. Find its area. Also find the segments into which the longest side is divided by the bisector of the angle opposite.

(*b*) Prove that if any chord is drawn through a fixed point within a circle the product of the segments is constant. If the segments of the longest chord are 3 and 12, what will be the segments of the shortest chord?

4. (*a*) On the surface of a square of side a semicircles are drawn with each side in turn as diameter. Find the area of each of the four lobes thus formed.

(*b*) The perimeter of a polygon is p. What will be the perimeter of a similar polygon having twice the area?

The area of a circle of radius a is trisected by two concentric circles. Find the radii of these circles.

5. (*a*) Find the area of the regular octagon inscribed in a circle of radius a.

(*b*) A square, an equilateral triangle, and a regular hexagon have the same perimeter, namely, 36 feet. Compare their areas. What principle is here illustrated?

SECOND SUBJECT

ALGEBRA

[Time allowed: 3 hours]

1. (*a*) Reduce to simplest terms:

$$\frac{(x^2+4x-21)\,(x^3+27)\,(x^2+3x+9)^2}{(x^2+10x+21)\,(x^3-27)\,(x^4+9x^2+81)}.$$

(*b*) Extract the square root of $y^2+2y^{\frac{1}{2}}-y^{\frac{1}{2}}+\frac{1}{4}$.

Find the greatest common divisor of $4x^3-3x^2-24x-9$ and $8x^3-2x^2-53x-39$.

2. (*a*) If a train travels a miles in h hours, how many feet does it go in 1 second?

(*b*) Solve the simultaneous equations

$$\frac{1}{x}+\frac{1}{y}+\frac{1}{z}=36,\ \frac{1}{x}+\frac{3}{y}-\frac{1}{z}=28,\ \frac{1}{x}+\frac{1}{3y}+\frac{1}{2z}=20.$$

3. (*a*) Two persons 14 miles apart, starting at the same time, will be together in 7 hours if they walk in the same direction, and in 2 hours and 20 minutes if they walk in opposite directions. Find their rates of walking.

(*b*) Solve the simultaneous equations

$$(a-b)\,x+(c+d)y=a,\ (a+b)x+(c-d)y=b.$$

4. (*a*) Solve the equation $\frac{x+4}{x-4}+\frac{x-2}{x-3}=\frac{19}{3}$.

(*b*) A hall can be paved with 200 square tiles of a certain size; if each tile were 1 inch larger each way it would take 128 tiles. Find the length of the edge of a tile.

5. (*a*) Solve the equations (1) $x^2+2\sqrt{x^2+6x}=24-6x$, (2) $\sqrt{x+2}+\sqrt{4x+1}=\sqrt{9x+7}$.

(*b*) Solve the simultaneous equations

$x^2+xy+2y^2=74$ and $2x^2+2xy+y^2=73$.

Appendix II

Third Subject

Arithmetic

[Time allowed: 3 hours]

1. (*a*) Multiply each of the numbers 2.30259, 2.99573, and 3.40120 by .43429, obtaining products correct to the fifth decimal place.

(*b*) Divide 63360 by 39.37

How many times does a wheel 2 feet in diameter revolve in rolling 1 mile? ($\pi = 3.1416$.)

2. (*a*) Simplify $\dfrac{\frac{1}{2}+\frac{1}{11}+\frac{7}{22}-\frac{1}{4}}{\frac{11}{13}-\frac{1}{26}-\frac{1}{2}+\frac{1}{4}}$.

Using decimals, find the value of $\frac{16}{25}-\frac{11}{20}+\frac{67}{100}-\frac{3}{8}$.

(*b*) The longitude of San Francisco is 122° 25′ 45″ W. and the longitude of Manila is 120° 57′ 30″ E. When it is 6 A.M. in San Francisco, what is the time in Manila?

3. (*a*) Find, correct to six places of decimals, the value of $\dfrac{\sqrt{2}-1}{\sqrt{2}+1}$.

(*b*) There are 231 cubic inches in a gallon. Find, to the nearest hundredth of an inch, the edge of a cubical receptacle holding 1 gallon.

4. (*a*) Find the simple interest on $3,200 at 4½ per cent. per annum for 2 years 7 months and 6 days.

A man's income from a 4½ per cent. investment is $1,200 a year. Find the amount of money invested.

(*b*) If water weighs 62.4 pounds a cubic foot, and if granite is 2.6 times as heavy, find the number of tons in a

block of granite 20 by 5 by 4 feet, allowing 2,240 pounds to a ton.

5. (*a*) If a nautical mile is 1.15 statute miles, and there are 60 nautical miles in 1 degree on a circle of longitude, how many statute miles north of Annapolis (latitude 38° 59′ N.) is Boston (latitude 42° 21′ N.)?

(*b*) There are 3,800,000 square miles in Europe and a population of 437,000,000. Find the population per square mile and the number of acres to each inhabitant.

Fourth Subject

Dictation Exercise in Spelling

The examiner will pronounce distinctly each word, repeating the word if necessary. Twenty minutes are allowed for this subject.

1. aggravate
2. bicycle
3. cemetery
4. emigrate
5. pursue
6. rental
7. blamable
8. perforate
9. sumptuous (*sump'chu-us*)
10. pious
11. vaccinate
12. essence
13. absence
14. bureau
15. ecstasy (*ec'sta-si*)
16. liquefy
17. hazel
18. beginning
19. incessant
20. serenity (*se-ren'i-ti*)
21. rhubarb
22. causal
23. achieve
24. irrelevant (*ir-rel'e-vant*)
25. simulate
26. terminal
27. decency
28. perfidy
29. pharmacy
30. calumny (*cal'um-ni*)
31. illiterate
32. already
33. disagreeable
34. embarrass
35. grievous
36. procedure
37. blissful
38. sacrilegious (*sac'ri-li'jus*)
39. foreign
40. gnarl

Appendix II

Fifth Subject

Grammar

[Time allowed: 2 hours]

1. (*a*) Define (1) phrase, (2) relative pronoun, (3) infinitive, (4) analysis.

(*b*) Write the principal parts of *choose*, *bear*, *hew*, *show*.

(*c*) Give the plural of *terminus*, *court-martial*, *chimney*, *spoonful*.

(*d*) What is the possessive singular of *horse*, *it*, *fox*, *father-in-law*?

2. Analyze the following sentence and parse the underscored words: "He hath a heart as sound as a bell and his tongue is the clapper, for what his heart thinks his tongue speaks."

3. Explain and correct all errors in the following sentences:

(*a*) We would have been glad to have given up our plans.

(*b*) The mink is a timid animal and they are difficult to catch.

(*c*) I think he is some better.

(*d*) The affair went on without me being aware of it.

(*e*) The President with his secretary are on the platform.

(*f*) Neither Keats nor Shelley use the word.

(*g*) Who do you think I am?

(*h*) It was John and me that passed you.

4. Write a theme of at least one page (about 300 words) on *one* of the following subjects:

(*a*) President Wilson's Pan-American policy.

(*b*) The need of military training in schools.

(*c*) Educational fads—Why I am not better prepared to pass my entrance examinations.

(*d*) Transportation in my State.

Sixth Subject

GEOGRAPHY

[Time allowed: 2 hours]

1. (*a*) Define the following terms: (1) Crater; (2) meridian; (3) delta; (4) peninsula; (5) isotherm; (6) latitude; (7) Gulf Stream; (8) monsoon; (9) Arctic Circle; (10) steppe.

(*b*) Bound the following: (1) Kentucky; (2) Peru.

2. (*a*) Fix the position of the following: (1) Riga; (2) Jaurez; (3) Saloniki; (4) Culebra; (5) Port au Prince; (6) Sulu; (7) Hilo; (8) El Paso; (9) Saginaw; (10) Nish.

(*b*) Trace the course of the following rivers, telling where they rise, in what direction and through what countries they flow, and into what waters they empty: (1) Vistula; (2) Nile; (3) Ohio; (4) Euphrates.

3. (*a*) State two of the chief products of each of the following: (1) Cuba; (2) Ohio; (3) Australia; (4) South Carolina.

(*b*) Name the principal products of the soil of the United States that are affected by a blockade of Germany, and name the principal imports into the United States from Germany in peace times.

4. Make a voyage from Rio de Janeiro to Seattle via the Panama Canal, naming the waters passed through, four ports of call, and the countries along which you would coast.

Seventh Subject

UNITED STATES HISTORY

[Time allowed: 2 hours]

1. (*a*) Summarize in one paragraph each, the discoveries of *two* of the following explorers: Hudson; La Salle; the Cabots; de Soto.

(*b*) Describe briefly the settlement and early government of Maryland.

2. (*a*) To what foreign country do we owe our success in the Revolution? Give the reasons.

(*b*) Explain the importance of the American naval victories on Lake Erie and Lake Champlain in the War of 1812.

3. (*a*) Write a short sketch of the life of *one* of the following: James Monroe; Henry Clay; David G. Farragut; Thomas A. Edison.

(*b*) What was the compromise of 1820? Of 1850?

4. (*a*) Describe the Peninsular Campaign in the Civil War.

(*b*) Name four important American inventions since the Civil War, and explain why you regard them as important.

ADMISSION

43. Candidates who pass the required examinations will receive appointments as midshipmen, and be admitted as such to the Naval Academy. Each midshipman on admission will be required to sign articles by which he binds himself to serve in the United States Navy during the pleasure of the President of the United States (including his time of probation at the Naval Academy), unless sooner discharged. He will be required to certify on honour his exact age.

44. The pay of a midshipman is $600 a year, commencing at the date of his admission.

45. Midshipmen will supply themselves, immediately upon their admission, with the following articles, viz.:

One white cap and anchor	$ 2.45
One dress jacket	20.78
One blouse	15.22
One pair dress trousers.	11.83
One pair service trousers	6.68
One overcoat	26.98
One reefer	12.18
One mackintosh	11.50
One cap cover	.24
Two pairs regulation leggings	1.40
One parade cap	3.10
One mug	.07
One soap box	.18
One laundry book	.25
One pair blankets	3.75
One pair overshoes	.83
Two pairs high shoes	9.60
Eight white shirts	4.00
Twelve collars	1.20
Two white blouses	8.00
Two pairs white trousers	4.00
Twelve pairs cuffs	2.20
Twelve pairs socks	2.40
*Eight towels	1.60
*Shaving outfit	2.65
Twelve pairs drawers (summer)	4.80
Twelve undershirts (summer)	4.32
One hand glass	1.15
One blue sweater	3.15
Two blue jerseys	4.00
One pair white shoes	1.80
Three white hats	1.05
One jackknife	.25
Two lanyards	.24
Six sheets	3.90
Hammock clews	.50
One pair bathing trunks	.15
Three pairs white gloves	1.20
Two clothes bags	.50
One requisition book	.40
One pass book	$ 0.30
Three stencils, ink, and brush	.75
Wash basin and pitcher	.90
One pair gymnasium slippers	.87
*One whisk	.17
*One coarse comb	.12
*One box soap	.30
*One hairbrush	.65
*Stationery	1.75
*Twelve white handkerchiefs	2.40
*One pair suspenders	.40
Four suits pajamas	3.80
*One toothbrush	.18
*Thread and needles	.75
*Blacking brush and blacking	.50
*Nailbrush	.50
Six pillowcases	.78
Name plate	.15
Two bedspreads	2.50
One slop jar	1.00
Two spatter cloths	1.00
One hair pillow	.75
One rug	.75
One hair mattress	4.85
One broom	.35
Three khaki blouses	5.01
Four khaki shirts	9.20
Four pair khaki trousers	5.00
One khaki belt	.17
One waste-paper basket.	.65
One trousers hanger	.30
Six coat hangers	.36
One strong box	1.60
One pair ear protectors	.20
Two manuals	.83
One pair collar anchors	.75
	$231.84

The articles marked *, not being required to conform to

a standard pattern, may be brought by the midshipman from home, but all other articles must conform to the regulations, and must therefore be supplied by the storekeeper.

46. Each midshipman must, on admission, deposit with the pay officer the sum of $60, for which he will be credited on the books of that officer, to be expended by direction of the superintendent in the purchase of textbooks and other authorized articles besides those enumerated in the preceding article.

47. **All deposits for clothing and the entrance deposit of $60 must be made before a candidate can be received into the Academy.**

48. Checks for these deposits ***must not be made payable to the order of the superintendent.*** They should be made payable to the candidate's own order and be presented to the pay officer of the Naval Academy at the time of deposit.

SUMMARY OF EXPENSES

Deposit for clothing, etc	$231.84
Deposit for books, etc	60.00
	$291.84[1]

The value of clothing brought from home is to be deducted from this amount.

49. Each midshipman will be paid, as soon as adjusted by the Treasury Department, the amount of his actual expenses in travelling from his home to the Academy, which he will deposit with the Midshipmen's Pay Officer to be credited to his account.

[1] NOTE BY AUTHOR.—This deposit should read $300.00. The value of clothing brought from home is deducted but only theoretically so, the credits for such clothing and for consequent excess deposit being placed on the pass book of the midshipman and shown in his amount available.

APPENDIX III

BIOGRAPHICAL NOTE

COMMANDER BUCHANAN.—This officer, who so successfully started the Naval Academy and inaugurated so many fine administrative ideas and methods which have endured to the present day, deserves to have his eventful life chronicled in this book.

Franklin Buchanan was born in Baltimore, Maryland, in 1800, and entered the Navy as a midshipman, January 28, 1815. He proved himself an exceptionally able officer and acquired a high reputation as a skilful, energetic, and systematic organizer. His commands prior to 1845 included the *Baltimore*, the *Peacock*, the *Mississippi*, and the *Vincennes*.

In 1845 he was selected as a member of a Board to devise means for starting a Naval Academy, and, when the Naval Academy was founded at Annapolis, he was appointed Superintendent, in which capacity he served from September 3, 1845, to March 14, 1847. He proved himself a man of iron will, and maintained discipline in the student body recalled from sea with a strong hand so that the success of the school was assured.

An active man, he grew restless as the Mexican War continued and, believing the School securely planted and started on the road to success, he asked for duty in the Gulf. In command of the *Germantown* he took part in the capture of Vera Cruz, March 29, 1847, and in several other engagements.

In November, 1851, he was a member of the Board that altered the course at the Naval Academy to one of four years with the summer practice cruises of three months.

He commanded the *Susquehanna* in the squadron of Commodore M. C. Perry, who sailed from Norfolk, Virginia, November 24, 1852, on that memorable cruise that opened Japan to foreigners. On July 13, 1853, at Kurihama, Uraga, Buchanan was the first "barbarian" ashore "to defile the soil of the holy country of Japan."

Buchanan became a captain in 1855 and in 1859 was made commandant of the Washington Navy Yard. On April 22, 1861, he resigned, but finding that his State did not secede, he wrote the Secretary of the Navy requesting that his resignation be withdrawn and that he be restored to the Navy. His request was not granted and he was dismissed the service, entering the Confederate Navy in September, 1861. He reconstructed the *Merrimac*, scuttled at Norfolk Yard by Commodore McCauley, and commanded it during the engagement with the *Cumberland* and *Congress*, on March 8, 1862, at Hampton Roads, Virginia, being so severely wounded that he did not take part in the fight with the *Monitor* the next day.

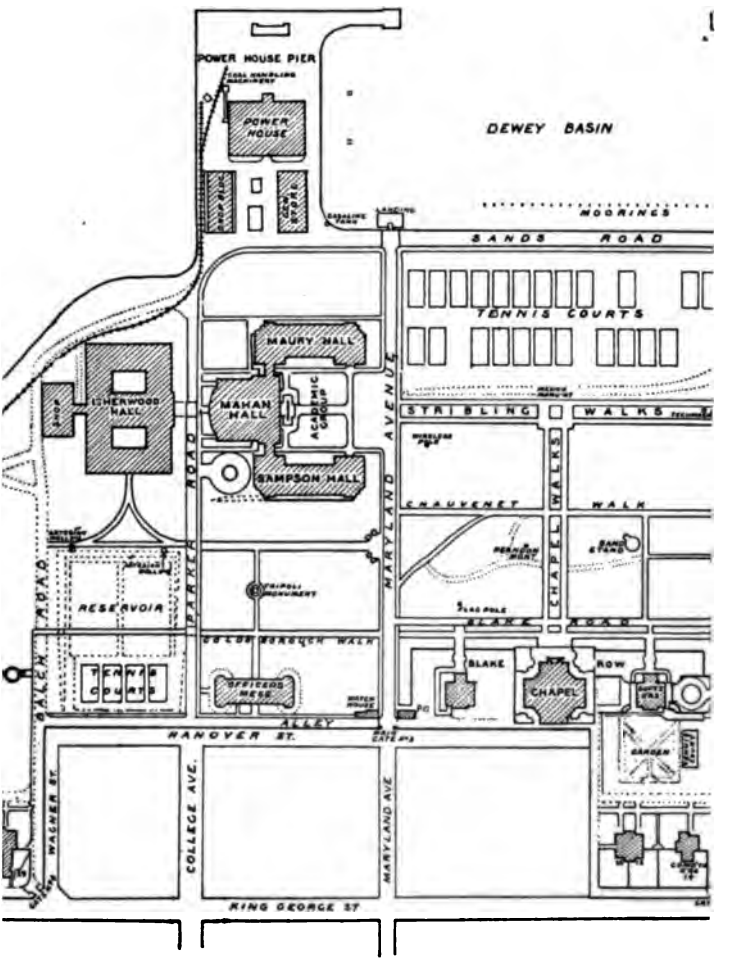
His services to the Confederacy were now recognized by a commission as Admiral and senior officer of the Confederate Navy.

In command of the ram *Tennessee* at the battle of Mobile Bay, August 5, 1864, he was wounded and captured.

After the war he was president of the Maryland Agricultural College for some time, and later a life insurance agent in St. Louis.

He died, May 11, 1874, in Talbot County, Maryland.

R I V E R


POWER HOUSE PIER
POWER HOUSE
DEWEY BASIN
MOORINGS
SANDS ROAD
TENNIS COURTS
MAURY HALL
LEWENWOOD HALL
MAHAN HALL
ACADEMIC BUILDING
SAMPSON HALL
STABLING
WALKS
MARYLAND AVENUE
CHAUVENET
WALK
CHAPEL WALKS
PARKER ROAD
RESERVOIR
TRIPOLI MONUMENT
BLAKE ROAD
BLAKE
ROW
CHAPEL
TENNIS COURTS
SPICERS MESS
ALLEY
HANOVER ST.
COLLEGE AVE.
MARYLAND AVE
WAGNER ST.
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